

CA JOURNAL

LIBRARY
COLLEGE OF ENGINEERING
DUKE UNIVERSITY

DOCUMENTS

AUG 30 1951

Duke University Library

OFFICE OF
AVIATION INFORMATION

Survey Group Recommends Development of New Planes

"Means should be established within the United States to permit immediate and rapid development of new types of civil transport," recommended the European Survey Group of the Prototype Aircraft Advisory Committee of the Civil Aeronautics Administration, following a recent trip to Europe. The Prototype Committee advises the CAA on matters relating to the testing and development of desirable transport type planes, and consists of industry and government representatives qualified in various fields.

The European Survey Group of the Committee spent 17 days in Europe during which time they looked over the transport type developments there. They visited five countries, eight airplane manufacturers, six airlines, and had conferences with some 100 aviation executives and specialists.

In addition to transport type development, the Group recommended that the United States should promptly get under way on the testing of available turbine powered aircraft to obtain design and operating data.

"The Technical Committees' tentative specifications are sound," they said; "however, the range of the jet transport should be increased."

They also reported that both the British and the Canadians are ahead of the United States in turbine powered transports and that while the U. S. position is potentially sound, the British have several years advantage due to their experience.

Group's Conclusions.—The tentative conclusions of the Group as reported to the Prototype Committee include the following:

"The British are considerably ahead of the U. S. in turbine powered transport aircraft. Canada also is ahead. Our position is potentially sound insofar as technical development is concerned. However, British experience gives them a 3- to 5-year advantage at this time.

"The impact of the British lead will start to be felt during 1952 by U. S. international operators. The British have been willing to pay and have paid a price for their position. Reportedly over 400 million dollars have been spent since 1943 on civil transport development. Competitive contracts have been let as we have done militarily.

"The French emphasis has been placed more on research and the development of a variety of new devices rather than on production facilities. However, the conventional design Breguet doubledeck passenger-freighter airplane, model 76-3, which is in

production, may have possibilities in cargo operation particularly in undeveloped countries.

"The Swiss, the Scandinavians and the Dutch favor U. S. aircraft, particularly in the large transport sizes and will as long as technical superiority warrants. Currency aspects and national prestige will no doubt modify this.

"The U. S. may not have lost an irretrievable amount in competitive position on turbine powered transports by delaying until this time, if immediate steps are taken to proceed with intensive testing of available turbine powered aircraft in order to obtain design, operating, airway and airport data; and to start the development of advanced types.

"All new turbine transport aircraft observed by the Group were developed primarily through a government sponsored program.

"Foreign countries are using United States helicopters but are making rapid progress, particularly Britain and France, to develop their own types.

"European feeder needs lie in a smaller and less

(Continued on page 92)

Pilot Applicants Get Written Test By CAR Change

Applicants for private pilot ratings are now required to take a written examination in addition to a flight test. The CAA started giving the examinations at the beginning of the month.

The examinations are in connection with the new aeronautical knowledge, experience, and skill requirements, set recently by the Civil Aeronautics Board in an amendment to the Civil Air Regulations. The written examinations are given to all applicants, except those qualifying on the basis of military competency.

Briefly, the amended regulations require a written examination on Civil Air Regulations, elementary navigation by pilotage, weather recognition, and safe aircraft operating procedures; an increased amount of cross-country flight instruction and solo practice; and a flight test more directly pointed to the flying the applicant will do as a private pilot.

Fifteen hours of dual instruction and 25 hours of solo practice are now required for a private pilot certificate. The experience requirement for flight time on special types of airplanes, such as two-control or nonspinnable, has not been reduced. Five hours of the dual instruction must have been in cross-country, three hours of which shall have been received before the first solo cross-country flight;

(Continued on page 93)

New Book Gives Pilot Exam Questions

Two hundred questions and answers providing knowledge which will enable the private pilot to fly with greater safety have been published in booklet form by the Civil Aeronautics Administration. Future written examinations for private pilot ratings will be on questions taken verbatim from this booklet.

In an effort to get questions which are practical and realistic, the CAA went to the grass roots of aviation for suggestions. The Examinations Branch, through CAA agents in the field, contacted nearly every flight operator, flight instructor, flight examiner, and flight school in the United States for ideas on the problems facing private pilots. In addition,

a careful analysis was made of accidents involving private pilots, and questions were written pointing up proper procedures to eliminate many dangerous situations. Thus, the material in the booklet, selected from thousands of ideas and questions submitted, covers essential information which the Civil Aeronautics Administration feels each private pilot should know.

The questions are brief and are submitted in true-false form.

The booklet, entitled "Questions and Answers for Private Pilots," is on sale at 15 cents a copy by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.

ACC Approves Decommissioning Policy For Four-Course L/MF Radio Ranges

The Air Coordinating Committee recently approved a policy to determine a schedule for the decommissioning of low/medium frequency 4-course radio ranges.

The Air Traffic Control and Navigation Panel of the ACC determined that the decommissioning of all 4-course, low frequency radio ranges would create serious communications and navigation problems for American aviation, due in part to the increased requirements of national defense and mobilization. Consequently, the ACC recommended that a limited national low/medium frequency, 4-course radio range system should remain in operation for an interim period.

The ACC said that facilities determined on a regional basis to be unessential for all users of the air space and not essential for air traffic control, navigation and national defense, be decommissioned during the fiscal year 1952. The schedule for decommissioning all other L/MF radio ranges should not be commenced until at least 1 year later.

Factors Governing Decommissioning.—The factors governing the discontinuance schedule as reported by the NAV Panel are as follows:

"It would be an ideal situation if the transition from L/MF to VHF operation could be accomplished without causing any inconvenience to the users. Inevitably, however, the transition from L/MF to VHF navigation must cause some inconvenience to the user and will result in some loss of efficiency in air traffic control. Consequently, the transition should be accomplished over as short a period of space as possible in order to minimize the hardship on the users and the effect of the transition on the air traffic control functions. The selection of the date on which to initiate the decommissioning schedule is dependent on the degree of inconvenience which can be tolerated by the users, the degree of efficiency which can be achieved during the period insofar as air traffic control is concerned, and the availability of Federal funds to continue the operation of the obsolescent L/MF facilities.

Effect on Traffic Control.—"Air Traffic Control to be efficiently operated is dependent upon adequate communications with the aircraft being controlled and immediately available intelligence as to the aircraft's position and altitude. Furthermore, Air Traffic Control is dependent upon the ability of the aircraft under its control to hold at designated points and to otherwise use navigational facilities upon which the efficiency of Air Traffic Control is dependent. As a consequence, the ability of the users to use the primary navigation facilities for traffic control aids determines for the most part the efficiency of Air Traffic Control. If there is a premature decommissioning of LF facilities, one of two results must be obtained—either the movement of non-VOR equipped aircraft must be restricted or acceptance made of the fact that some deterioration of Air Traffic Control will result.

"Although it is recognized that air traffic control procedures must be complex while concurrent use is made of the L/MF and VOR systems and that this complexity results in less efficient control, nevertheless the acceptance and use of the VOR as a primary aid following completion of the decommissioning schedule will result in a simplification of air traffic control and navigational procedures. For maximum efficiency, non-VOR equipped aircraft may be required to accept some restriction when the VOR becomes the primary aid.

Effect on Military Flights.—"The military aircraft in terms of plane movements and numbers are the primary users of the L/MF ranges due to the demands which have been imposed upon the military for the national defense and the increased mobilization effort of the country. Military and other aircraft have not yet been equipped with the

VOR receiver in sufficient quantity to predicate operation on the basis of the VOR being the primary navigational aid. Premature initiation of the decommissioning schedule of the L/MF radio range before the using agencies are ready to accept the VOR as a primary aid would further complicate the already complex air traffic control procedures because of the resulting loss of LF holding fixes and enroute navigation, have a serious effect on the assigned defense functions of the military, and impair the nation's mobilization effort in that severe restrictions would be experienced in the operation of essential military and civil aircraft movements.

"Because the majority of the aircraft are not yet equipped to use the VOR as a primary navigational device and because the military, particularly, cannot accept the type of restrictions of the operations which would be necessary if decommissioning were commenced at this time, it must be concluded that because of the national defense the CAA program to decommission the 4-course L/MF ranges must be deferred until the majority of the using aircraft are ready to convert and use the VOR as a primary aid. This conversion should take place in as short a space of time as possible. It is apparent however that total decommissioning of all 4-course L/MF ranges now operated by the CAA would create serious problems until some substitute has been developed to perform certain communications and navigational functions which the VOR is unable to furnish unless the VOR program is greatly expanded. The following is an attempt to enumerate the more obvious problems:

"NAVIGATION.—(a) There are indications that future high speed jet operations will pose navigation and air traffic control problems which may or may not be initially satisfied by the VHF system. It is expected, however, that the VHF system eventually will meet normal high altitude domestic navigation and communications requirements. (RTCA Special Committee 57 has been established to study this problem and to determine if the VHF omnirange meets the operational requirements for high altitude flying.)

"(b) There is a requirement to provide a limited L/MF airways system in the continental United States for a variety of purposes, such as cross-country VFR and IFR operations, forestry service, and in areas where generally VOR reception at low levels would not be available.

"COMMUNICATIONS.—(a) Since the VHF omnirange is limited to line-of-sight navigation and communications services, the omnirange will not satisfy the communications requirements of operators of small airports in many areas who do not have drops on meteorological Teletype circuits.

"(b) Aircraft operating at low altitude levels outside the service area of VHF facilities and aircraft now equipped with VHF, both on cross-country and local flights, will present a critical problem to the Air Defense Command during a period of military emergency. It is essential that the CAA retain the ability to transmit recall and other instructions which are pertinent to directing aircraft movements to meet national defense requirements.

"(c) During periods of military emergency, it is essential that the CAA retain the ability to notify all aircraft and airport operators as to the conditions of

(Continued on page 95)

Vol. 12 August 20, 1951 No. 8



CAA JOURNAL

DEPARTMENT OF COMMERCE
Charles Sawyer, Secretary

Civil Aeronautics Administration
Charles F. Horne, Administrator

Ben Stern, Director
Office of Aviation Information

Issued on the 20th of each month by the Office of Aviation Information. Subscription 75 cents a year in the U. S. and Canada. Foreign countries, \$1.00. Sold by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. The printing of this publication has been approved by the Director of the Bureau of the Budget, June 29, 1949.

CAA and CAB Releases

Copies of CAA releases may be obtained from the CAA Office of Aviation Information. CAB releases are obtainable from the Public Information Section of the Board.

Administration

CAA Experts Assigned to Help Two S. American Countries—(CAA 51-34) (July 6).

CAA Urges Airmen to Hurry and Get Identification Cards—(CAA 51-35) (July 17).

CAA Booklet Gives Questions and Answers for Private Pilot Exams—(CAA 51-36) (July 19).

Colorado Police Now Aid Pilots in Filing Flight Plans—(CAA 51-37) (July 25).

CAA to Give Written Examinations for Private Pilot Ratings—(CAA 51-38) (July 30).

CAA Urges Pilots to Use Their Radios—(CAA 51-39) (August 1).

Flight Instruction Manual Issued by CAA—(CAA 51-40) (August 2).

CAA Reminds Pilots They Must Have Sojourn Permit to Fly Abroad—(CAA 51-41) (August 3).

CAA Praises Role of Small Planes in Floods and Disasters—(CAA 51-42) (July 26).

Suggested Uniform State Aviation Mobilization Plan Issued by CAA—(CAA 51-43) (August 5).

Board

Summary of Board Actions Concerning Investigation of Practices and Conduct of Colonial Airlines and Certain of its Officers—(CAB 51-47) (July 3).

CAB Approves Passenger Helicopter Service for Los Angeles Airways—(CAB 51-48) (July 11).

Board Proposes to Limit Maximum Operating Weight of Curtiss C-46 Passenger Transports—(CAB 51-49) (July 18).

CAB Sets Hearing Date for United Air Lines Accident Near Ft. Collins, Colo.—(CAB 51-50) (July 18).

Board Issues Supplemental Opinion in Southern Service to the West Case—(CAB 51-51) (July 19).

Board Rescinds Temporary Interchange Agreements—(CAB 51-52) (July 20).

Preventive Maintenance

Engines seldom fail in flight if a pilot has made the proper check before take-off. Engine failure is progressive, and attention to checking details is good life insurance.

Board Recommends Reduction in Weights Of C-46 Transports

In a "Notice of Proposed Rule Making" the Civil Aeronautics Board announced recently that it had under consideration a regulation that would reduce the presently allowable maximum operating weights of certain C-46 (Curtiss Commando) passenger transport aircraft, after October 1, 1951.

The Board said that it proposed to reduce permissible maximum weight of the C-46 passenger transports in two stages; the first stage, effective on October 1, 1951, would limit the maximum operating weight to 45,800 pounds, and the second stage, effective on October 1, 1952, would limit the weight of C-46 passenger aircraft to 43,500 pounds. At the present time some operators have been operating the C-46 with a permissible maximum weight of 48,000 pounds.

In explaining its reasons for proposing this amendment to its safety regulations, the Board stated that an intensive reinvestigation of the performance capabilities of the C-46 had been conducted by the Administrator of Civil Aeronautics in January 1951. These tests, initiated as a result of several fatal accidents, showed that this model aircraft is markedly deficient in single-engine performance at certain of the maximum weights now authorized.

In particular, at 48,000 pounds, the take-off performance is insufficient for the airplane to continue flight if one of the engines should fail during the critical phase of the take-off, and in addition, the airplane at such weight, will not meet the single-engine enroute performance requirements of Part 3, the governing Civil Air Regulation. The Administrator's tests do show, however, that the airplane will meet the Part 3 requirements at a maximum weight of 45,800 pounds, although the complete transport category performance requirements will still not be met in full. In this connection it was ascertained that the maximum weight of 48,000 pounds allowed for certain airplanes of this type was based upon tests conducted under exceptionally favorable conditions. In view of these considerations, the Board believes that for passenger operation some of the currently authorized weights result in inadequate performance. Accordingly, the Board proposes to increase such performance in commercial passenger operations by lowering certain of the presently allowable maximum weights.

The C-46 airplane was developed by the Curtiss-Wright Corporation and used in military air transport operations during World War II and became available for civil aviation use in 1947. The Board said that the C-46 was not intended for operation under the strict regulations governing civil transport category airplanes and consequently had never become eligible for use in scheduled airline passenger operations.

CAB Approves Helicopter Use For Points in Los Angeles Area

The Civil Aeronautics Board recently authorized Los Angeles Airways, Inc., to operate helicopter passenger service to points in the Los Angeles area for a period of 5 years, to September 30, 1956. The Board also extended for the same period the present authorization of Los Angeles Airways to carry property and mail over routes from Los Angeles International Airport to numerous points within a 50-mile radius of Los Angeles, and to San Bernardino.

The Board originally authorized helicopter mail and property service in 1947, and Los Angeles Airways has operated the service since October of that year. The new passenger authorization provides for air service between Los Angeles International Airport, Santa Ana, Riverside, San Bernar-

Interchange Agreements Disapproved by Board

The Civil Aeronautics Board announced last month that it had rescinded its tentative opinion which granted temporary approval of an interchange agreement between National Airlines, Inc. and Pan American Grace Airways, Inc., and of Supplement No. 5 to the through flight agreement between Pan American World Airways and Panagra. However, the issue of permanent approval of these two agreements which is a part of Docket No. 4882 "New York-Balboa Through Service" proceeding is not affected by the Board's action rescinding the temporary approval.

The Board pointed out that at the present time no equipment interchange exists between National and Panagra. In addition, in rescinding temporary approval of the supplement to the through flight agreement between Pan American and Panagra, the Board's action does not affect the original through flight agreement between these two carriers which is still operating between Miami and Balboa and points south.

In an accompanying opinion and order, the Board also granted an exemption to Braniff Airways, Inc., which will permit that carrier to engage in air transportation to and from Miami, Florida, as an intermediate point on its route between Houston, Texas and Havana, Cuba, and points in Latin America. The Board's exemption, however, will not permit Braniff to carry local Miami-Houston or Miami-Havana traffic, but would permit Braniff to operate from Havana to Houston via Miami carrying through traffic. The exemption granted by the Board to Braniff will become effective immediately and will continue in effect until the issuance of a final order of the Board in Docket No. 4882.

Referring to the temporary interchange agreements between National and Panagra and through flight agreement between Pan American and Panagra on which the Board had issued a tentative opinion granting temporary approval on April 12, 1951, the Board said that it regretted the situation was such that the parties cannot voluntarily put into operation on an interim basis the voluntary agreements filed with the Board and supported by all of them during the public hearings thereon. Consequently, the Board felt it would be a futility and inconsistent with the public interest to make final the temporary approval that had been granted.

The Board revealed that it intends to expedite the New York-Balboa Through Service proceeding (Docket No. 4883) as rapidly as possible to determine the issues surrounding through service to Latin America and has directed that hearing begin on this question not later than October 1, 1951.

The Board pointed out that there appeared to be general agreement that through service between points in the northeastern part of the U.S. and South America was in the public interest, and this view, in fact, has been urged by all parties to the agreements which the Board rescinded.

dino and Pasadena, with provision for service to additional points within a 50-mile radius of Los Angeles, subject to Board approval.

The Board said that it believed the authorization of helicopter passenger service and extension of the helicopter mail and property service for a full 5-year period will be adequate to test Los Angeles Airways' experiment in passenger service and to permit further development of its property and mail service, and will give the Board an opportunity to review the results of the operations within a reasonable time, especially with respect to the worth of the experiment in terms of cost to the Government. The Board's authorizations are made on the basis of the service being rendered exclusively with rotary-wing aircraft.

Supplemental Opinion In "Service to West" Rescinds Prior Action

The Civil Aeronautics Board last month issued a supplemental opinion in the *Southern Service to the West* case, rescinding its prior action approving the interchange agreement between Braniff Airways, Inc.; Continental Airlines, Inc.; and American Airlines, Inc., for service between Houston and the West Coast. In place thereof the Board granted an extension of Continental Air Lines route No. 29 from San Antonio to Houston for the operation of through services, and found to be in the public interest an interchange of aircraft between Continental and American which will enable those carriers to provide through service between Houston and San Antonio, on the one hand, and El Paso and points on American's route No. 4 west of El Paso, on the other.

The Continental route extension is for a 3-year period and is subject to the condition that Continental shall serve Houston only on through flights operated in conjunction with American, pursuant to any agreements between both carriers providing for through service between Houston and points west of El Paso by interchange of aircraft as may be approved by the Board, which flights shall not serve any points between San Antonio and El Paso.

The Board reopened the proceeding for further argument on the following issues: (a) whether the provision of additional through service by interchange of aircraft by Eastern between Miami and Houston, Braniff between Houston and Amarillo, and TWA between Amarillo and points west thereof, would be in the public interest; and (b) whether, in the event such an interchange is found to be in the public interest, the public convenience and necessity require amendment of Eastern's route authorizations to authorize it to engage in trans-Gulf operations between Miami and/or Tampa, on the one hand, and Mobile, New Orleans and/or Houston on the other, for the operation of through flights under said interchange; and that such issues be set down for oral argument before the Board on September 17, 1951.

The Board affirmed its prior decision in this case in all other respects.

Passenger Traffic at WNA Sets New All-Time Record

Airline passenger traffic at Washington National Airport climbed to a new all-time high during June 1951 when scheduled airline passengers getting on or off totaled 232,710. This was a gain of 8,721 passengers over the previous high set a month earlier and a significant increase of 80,259 passengers (53 percent) over June 1950.

During the first 6 months of 1951, the airport handled 1,161,350 passengers, an average of 6,400 each day. Total passengers for the first half of this year represented a gain of 64 percent over the like period of 1950. It is interesting to note that the volume for January-June 1951 is virtually equal to the volume for the entire year 1948—1,161,350 against 1,186,676.

Comparable figures for the first half of each of the 6 postwar years showing a steady growth at this airport are given below.

National Airport Passenger Traffic

	January-June	Total	Arriving	Departing
1946.....	537,482	256,535	280,947	
1947.....	546,960	259,559	287,401	
1948.....	557,468	278,406	279,062	
1949.....	681,714	337,535	344,179	
1950.....	707,091	351,419	355,672	
1951.....	1,161,350	591,168	570,182	

Official Actions Civil Aeronautics Board

Regulations

Amdt. 20-13.....Effective July 11, 1951

Amends Part 20 with respect to airman identification card requirements after September 1, 1951.

The Board issued the following explanatory statement regarding this amendment:

"Since scheduled air carriers are required to keep airman records which afford positive identification of airline personnel, this regulation is intended to exempt airman while engaged in operations conducted by scheduled air carriers from the requirement that they possess identification cards. Since, however, an airman may exercise the privileges of his certificate in other operations, he is required to possess while engaged in such other operations either an airman identification card or other identification card acceptable to the Administrator."

Amdt. 21-9.....Effective July 11, 1951

Amends Part 21 by adding a new § 21.45 requiring identification cards after September 1, 1951.

Amdt. 24-5.....Effective July 11, 1951

Amends Part 24 with respect to airman identification card requirements after September 1, 1951.

Amdt. 27-4.....Effective July 11, 1951

Amends Part 27 by adding a new § 27.23 requiring airman identification cards after September 1, 1951.

Amdt. 33-5.....Effective July 11, 1951

Amends Part 33 by adding a new § 33.46 requiring airman identification cards after September 1, 1951.

Amdt. 34-4.....Effective July 11, 1951

Amends Part 34 by adding a new § 34.20 requiring airman identification cards after September 1, 1951.

Amdt. 35-4.....Effective July 11, 1951

Amends Part 35 by adding a new § 35.21 requiring airman identification cards after September 1, 1951.

PR-12.....Effective June 13, 1951

Amends Procedural Regulations Part 302 with respect to recommended decisions in rate cases.

SR-363.....Effective June 21, 1951

Supersedes SR-346 and extends until June 30, 1952 the termination date of the special operating rules for scheduled air carriers in long-distance domestic scheduled air carrier operations.

SR-364.....Effective June 26, 1951

Permits the operation by Transocean Air Lines of certain aircraft in the Trust Territory of the Pacific Islands, under contract with the Department of the Navy.

SR-365.....Effective July 5, 1951

Extends until July 31, 1952, the authorization provided in SR-340 for issuance of a limited mechanic certificate with propeller or aircraft rating to an individual under stated conditions.

ER-164.....Effective June 28, 1951

Amendment No. 5 to Part 291 postpones the effective date of Amendment No. 1 concerning operational limitations on large irregular carriers from July 5, 1951, until such date as may later be fixed by the Board following completion of certain appeal proceedings.

Amdt. 43-7.....Effective August 1, 1951

Amends Part 43 concerning flight area limitations for student pilots.

The Board issued the following explanatory statement in connection with this amendment:

"In promulgating on May 3, 1951, Amendment 43-6 relating to the requirements for private pilot ratings, it was the Board's intention that a student be permitted, if otherwise qualified, to fly an aircraft outside a local flying area after obtaining a total of 15 hours of flight time, or after an approved air agency deems him competent. As published, Amendment 43-6 requires 15 solo flight hours, instead of a total of 15 hours of flight time, and, therefore, contains an unnecessary restriction which was not intended. For this reason this amendment sets forth the proper standard which permits a student, if otherwise qualified, after obtaining a total of 15 hours of flight, including his solo flight time, to fly outside his local flying area."

Safety Orders

S-420 denies petition of Regina Cargo Airlines for rehearing in the matter of the revocation of its nonscheduled air carrier operating certificate (June 12).

S-421 modifies examiner's finding and the Board's order in the matter of a complaint of the Administrator against John Rupe (June 12).

S-422 terminates proceeding in the matter of a complaint of the Administrator against Charles Griffin, Jr., so as to permit him to apply for the reissuance of an airman certificate (July 3).

S-423 denies appeal of the Administrator in the matter of his complaint against Orville L. Doughty (July 3).

S-424 denies appeal of the Administrator from the examiner's initial decision dismissing the complaint in the proceeding concerning Arthur E. Sandner (July 9).

Airline Orders

E-5324 amends order No. E-3210, as amended by subsequent orders, in the matter of the application of Hughes Tool Company for approval of the acquisition of control of Trans World Airlines (April 25).

E-5325 authorizes Mid-West Airlines to suspend service at Fort Dodge until 60 days after the date of the Board's decision on Mid-West's application in Docket No. 4052, or until such time as adequate facilities are available for scheduled air carrier operations by it; otherwise denies (April 27).

E-5326 denies petition of Eastern Air Lines for reconsideration of the Board's order No. E-5203 which granted Conner Air Lines an individual exemption so as to permit it to engage in certain irregular air transportation (April 26).

E-5327 grants Eastern Air Lines permission to inaugurate service on or after April 29, 1951, at New York, N. Y., on its

route No. 108 through use of the Newark Municipal Airport (April 27).

E-5328 opinion and order amend temporary certificate of Trans-Pacific Airlines, Ltd., for route No. 99 to include authority to transport mail. Approved by the President April 25 (March 1).

E-5329 grants Transocean Air Lines exemption for 6 months from the provisions of section 401(a) of the Act and Part 291 so as to permit it to operate four one-way flights per month from Munich, Germany, to the United States, carrying refugees under contract with the International Refugee Organization; otherwise denies (April 26).

E-5330 grants Seaboard & Western Airlines exemption for 6 months from the provisions of section 401(a) of the Act and Part 291 so as to permit it to operate six one-way flights per month from Europe to the United States carrying refugees under contract with the International Refugee Organization; otherwise denies (April 26).

E-5331 grants American Airlines, Delta Air Lines, Eastern Air Lines, National Airlines, and Pan American World Airways leave to intervene in the matter of the application of Peninsular Air Transport for an exemption (May 1).

E-5332 orders American Airlines, Eastern Air Lines, Trans World Airlines, and United Air Lines to show cause why the Board should not fix certain temporary mail rates to be paid to each of them on and after January 1, 1951, for the transportation of mail over their respective routes within the continental United States and between the United States and terminal points in Canada (April 27).

E-5333 amends paragraphs 1, 2 and 3 of order No. E-4985 by substituting "Kodiak Airways, Inc." in lieu of the name "Robert L. Hall, d.b.a. Bob Hall's Air Service (Hall)" and "Hall" wherever said names appear, to be effective so long as Robert L. Hall retains certain ownership and control of the voting stock issued by Kodiak Airways, Inc. (April 27).

E-5334 grants Ozark Airlines permission to inaugurate service on or after May 15, 1951, at East St. Louis, Ill., on route No. 107, through the use of Lambert Field (April 30).

E-5335 grants Flight Engineers International Association-PAA Chapter, Former Council No. 29 of Air Line Pilots Association, and Transport Workers Union of America, CIO, leave to intervene in the reopened North Atlantic Route Transfer case (April 30).

E-5336 exempts Aerovias Sud Americana from the provisions of section 401(a) of the Act and Part 291, until 60 days after final decision in Docket No. 3280, so as to permit it to operate 15 round trip flights per month carrying bulk cargo only between Tampa-St. Petersburg, Fla., and Guatemala City, Guatemala, without regard to regularity, subject to stated restriction; otherwise denies (April 30).

E-5337 approves interchange agreements between National Airlines, Delta Air Lines, and American Airlines to provide through plane service between Miami and the West Coast on routes Nos. 39, 24, and 4; approves agreement between Braniff Airways, Continental Airlines, and American Airlines to provide through plane service between Houston, Texas, and the West Coast on routes Nos. 9, 29, and 4, all subject to stated terms and conditions; exempts said air carriers from section 408 of the Act insofar as applicable to the interchange agreements; otherwise denies petitions (May 1).

E-5338 approves interlocking relationships arising out of the holding by Robert V. Fleming of certain positions in Pan American World Airways, the Chesapeake and Potomac Telephone Company, and Southern Railway Company (May 1).

E-5339 opinion and order modify opinion and amend order No. E-4928, and make effective the final mail rate provided in that order to be paid Florida Airways, Inc.; overrule all exceptions not specifically sustained in this opinion (May 1).

E-5340 grants E. W. Wiggins Airways exemption for 60 days from the provisions of section 401(a) of the Act so as to permit it to operate one nonstop round trip flight daily between Boston and Manchester on route No. 79; otherwise denies (May 1).

E-5341 fixes certain temporary mail rates for Cordova Air Service over its routes certificated for the transportation of mail (May 1).

E-5342 grants Capital Airlines, Trans World Airlines, the Postmaster General, the Pennsylvania Public Utility Commission, the Commonwealth of Pennsylvania and the Pennsylvania Aeronautics Commission leave to intervene in the matter of application of all American Airways for amendment of its certificate for route No. 97 to establish a route segment between Scranton-Wilkes Barre and Harrisburg, Pa., via Hazelton, Pa. Dismisses petition of United Air Lines (May 2).

E-5343 extends from May 16, 1951, to August 13, 1951, the suspension of service ordered in E-5117, in the matter of the complaint of Bohrer Air Freight Co., and Airport Package Service with respect to proposed change in tariff rule filed on behalf of 12 air carriers (May 2).

E-5344 denies application of Aerovias Sud Americana for an exemption which would permit it to engage in certain air transportation as authorized by Part 291; continues temporary exemption; denies requests of various air carriers (May 2).

E-5345 dismisses proceeding of investigation and suspension instituted by the Board under Eastern Air Lines' Local Passenger Tariff, C.A.B. No. 44, and National Airlines' Local Passenger Tariff, C.A.B. No. 44 (May 2).

E-5346 dismisses application of Interstate Air Transport Company for a certificate (May 3).

E-5347 grants Northeast Airlines leave to intervene in the matter of The National DC-6 Daylight Coach case (May 3).

E-5348 grants United Air Lines leave to intervene in the Additional Service to Kansas case (May 4).

E-5349 dismisses the complaint of Pacific Northern Airlines against Pan American World Airways regarding joint rates, fares, and charges applicable to air transportation between Seattle, Wash., and points in Alaska (May 4).

E-5350 amends orders Nos. E-4411 and E-4319, subject to same terms and conditions, to include approval of certain interlocking relationships arising out of positions held by Willard F. Place in Railway Express Agency, and various common carriers (May 4).

E-5351 denies petitions of Eastern Air Lines, National Airlines and interested communities and civic organizations for rehearing, reargument and/or reconsideration of the Board's opinion and orders Nos. E-5090 and E-5231 in the Southern Service to the West case (May 4).

E-5352 denies petition of the Africa Pilots Committee for leave to intervene in the matter of The North Atlantic Route Transfer case (May 4).

E-5353 amends orders Nos. E-509 and E-4319, subject to same terms and conditions, to include approval of certain interlocking relationships arising out of positions held by Harry W. Von Willer in Railway Express Agency, Incorporated, and various common carriers (May 7).

E-5354 denies petitions of Trans-Texas Airways, Pioneer Air Lines, and the Chambers of Commerce of Dallas, Midland, Odessa, San Angelo, Texas, and the San Angelo Board of City Development for reconsideration of the Board's opinion and order No. E-5110 in the Trans-Texas Airways Certificate Renewal case; dismisses petitions of the City of Crystal City, Texas, the Crystal City Chamber of Commerce, and Pioneer Airlines for reconsideration of opinions and order No. E-4585 in the Pioneer Certificate Renewal case; extends for 30 days the effective date of Pioneer's certificate insofar as it prohibits service to San Angelo and Dallas or Fort Worth on the same flight (May 7).

E-5355 grants Edgar A. Stewart d/b/a Stewart Air Service exemption until August 1, 1951, subject to stated conditions, from the provisions of Section 401 (a) of the Act so as to permit him to engage in foreign air transportation of persons on one weekly round-trip charter flight between Los Angeles, Calif., and Las Cruces, Lower California, Mexico, carrying members of The Sportsman's Travel Club, Inc., of Calif. (May 7).

E-5356 grants Associated Air Transport exemption for 2 years from certain provisions of the Act, subject to stated conditions, so as to permit it to engage in interstate and overseas air transportation of persons and property and in foreign air transportation of property only; terminates temporary exemption granted by section 291.16; otherwise denies (May 7).

E-5357 institutes proceeding to determine whether Agreement C.A.B. No. 3735 providing for the elimination of advance charges to local cartage operators at New York, N. Y., and Newark, N. J., is adverse to the public interest; consolidates it into the proceeding in Docket No. 4850 (May 7).

E-5358 authorizes Ozark Airlines to suspend service at Miami, Okla., for 6 months or until such time as suitable airport is available for scheduled air carrier operations (May 8).

E-5359 grants relief to Youth Argosy from the provisions of section 401 (a) of the Act so as to permit it, subject to stated conditions, to arrange air transportation of only those persons, and their personal baggage, who, on or prior to March 23, 1951, made specific reservations with Argosy for transportation between the United States and Europe between May 15 and October 1, 1951, providing that all transportation authorized by this order shall be performed prior to October 1, 1951; otherwise dismisses and denies (May 8).

E-5360 opinion and order amend certificate of Pan American World Airways so as to authorize it to engage for 3 years in air transportation of persons, property, and mail beyond the intermediate point Guatemala City, Guatemala, to the terminal point Los Angeles; otherwise denies. Approved by the President May 7, 1951 (April 12).

E-5361 approves, subject to stated provisions, the interlocking relationship arising out of the holding by Robert E. Peach of certain positions in Chartist, and Robinson Airlines Corporation (May 9).

E-5362 dismisses the proceeding of investigation and suspension instituted by Board order E-5014 as amended by E-5201, in the matter of rate adjustments proposed by and on behalf of Capital Airlines, U. S. Airlines, The Flying Tiger Line, and Slack Airways (May 9).

E-5363 denies motion of National Airlines requesting the Board to issue a tentative decision in the matter of the joint application of National and Eastern Air Lines for approval of an agreement for interchange of equipment at New Orleans (May 9).

E-5364 fixes certain temporary mail rates for Central Airlines over its entire system (May 9).

E-5365 grants Piedmont Aviation temporary exemption, with stated provision from the provisions of section 401 (a) of the Act and its amended temporary certificate for route No. 87, so as to permit it to serve Winston-Salem, N. C., as an alternate intermediate point to Danville, Va., on one daily round trip flight over segment 3; otherwise denies (May 9).

E-5366 issues a commission to three persons to take depositions of certain parties, residents of Canada, whose testimony is relevant and material to the issues in the matter of the investigation of the practices and conduct of Colonial Airlines, Inc. and certain of its officers (May 9).

E-5367 grants Trans-Texas Airways temporary exemption from the provisions of section 401 (a) of the Act so as to permit it to engage in air transportation of persons, property, and mail to and from Nacogdoches, Texas, as an alternate point to the intermediate point Lufkin, Texas, on one daily round trip flight over segment 5 of route No. 82; otherwise denies (May 9).

E-5368 denies second petition of Cook Cleland Catalina Airways for reconsideration and request for stay in the matter of its application for an exemption (May 10).

E-5369 orders certain consolidations and severances; limits participation of Eastern Air Lines and Delta Air Lines, and grants petitions to intervene in the matter of the renewal of the temporary certificate for route No. 87 held by Piedmont Aviation and the elimination of the intermediate point Hickory, N. C., from the certificate for route No. 51 held by Capital Airlines (May 9).

E-5370 amends order No. E-5148 in the matter of certain temporary mail rates for Northern Consolidated Airlines over its Fairbanks-Bethel Route (May 10).

E-5371 opinion and order in the Atlantic City-New York-Newark Extension case amend certificate of All American Airways for route No. 97 so as to extend segment 2 beyond Atlantic City, N. J., to co-terminal points Newark, N. J., and New York, N. Y., via the intermediate point Asbury Park-Long Branch-Monmouth Beach, N. J. (May 11).

E-5372 denies respondent's petition for reconsideration of order No. E-4715 in the matter of the application of Charles C. Sherman and Edna K. Sherman for approval of certain interlocking relationships and stock ownership, and an investigation into the relationships between Airline Transport Carriers, Inc., and California Central Airlines (May 11).

E-5373 approves agreements between Pan American World Airways, Various Air Carriers, Foreign Air Carriers, and Other

Carriers relating to rates embodied in resolutions adopted by mail vote of IATA Traffic Conference No. 2 (May 11).

E-5374 grants Central Airlines permission to inaugurate service May 15, 1951, at Borger, Texas, through use of Hutchinson County Airport (May 11).

E-5375 Grants American Airlines, Pan American World Airways, Delta Air Lines, Pacific, Northern Airlines, Eastern Air Lines, and Northwest Airlines leave to intervene in the matter of the application of New England Air Express for an exemption (May 11).

E-5376 grants All American Airways exemption, during the effective period of its temporary certificate for route No. 97, from the provisions of section 401 (a) of the Act so as to permit it to serve Atlantic City, N. J., Georgetown and Rehoboth Beach, Del., and to operate non-stop service between Washington, D. C., or Baltimore, Md., on the one hand, and Georgetown, Rehoboth Beach, Del., on the other; otherwise denies (May 14).

E-5377 amends order No. E-4904 so as to exempt Northern Consolidated Airlines until December 1, 1951, from the provisions of section 401 (a) of the Act so as to permit it to engage in interstate air transportation of persons and property within the territory of Alaska pursuant to contracts between it and any Department of the Military Establishment, or request of any Department in connection with its contracts with other persons (May 14).

E-5378 consolidates with oral argument upon the exceptions to the tentative decision (E-5282), oral argument on the issues raised by the petitions of Eastern Air Lines, Pan American World Airways, and the Pan American directors of Pan American-Grace Airways in the matter of agreements relating to interchange and through flight operations.

E-5379 approves, subject to stated conditions, agreement between American Air Transport, Inc., and various other air carriers relating to the establishment of the Independent Air Carrier Conference of America (May 15).

E-5380 orders Ozark Airlines to show cause why the Board should not fix certain temporary mail rates for mail transported over its entire system (May 17).

E-5381 grants Chicago and Southern Air Lines and Eastern Air Lines leave to intervene in the matter of the application of Delta Air Lines for amendment of its certificate for routes Nos. 25 and 54 (May 16).

E-5382 approves certain agreements involving Western Air Lines, Frank L. Bruce d/b/a Yellow Cab Company, various air carriers, and other carriers, relating to intercompany arrangements (May 16).

E-5383 opinion and order amend, for 3 years, effective July 15, 1951, the certificate of Mid-Continent Airlines for route No. 26, so as to include Lincoln, Neb., as an intermediate point between Omaha, Neb., and St. Joseph, Mo. (May 16).

E-5384 orders Southwest Airways Company to show cause why the Board should not establish the mail rates set forth in an attached statement over its entire system (May 17).

E-5385 orders Chicago and Southern Air Lines to show cause why the Board should not establish the mail rates set forth in an attached statement over its Latin American routes on and after November 1, 1946 (May 18).

E-5386 grants British Overseas Airways Corporation permission to inaugurate service at Boston, Mass., on May 2, 1951, through use of General Edward Lawrence Logan Airport (May 18).

E-5387 authorizes Southwest Airways Company to omit service for 30 days from date of this order, to Fort Bragg, Calif., over segment 3 of route No. 76 on one short-of-terminal daily round-trip flight scheduled to arrive there during the hours of darkness; otherwise denies (May 18).

E-5388 denies that portion of petition of Eastern Air Lines for reconsideration of the Board's order No. E-5205 terminating the investigation of the routes and property of National Airlines (May 18).

E-5389 institutes proceeding and consolidates into Docket No. 4882, directing Braniff Airways and National Airlines to show cause why the Board should not order a compulsory interchange operation between them for through service between New York and Balboa; amends order No. E-5205 so as to include consideration of the question of participation of Panagra in the proposed Pan American-Eastern interchange operation; except as granted, denies petitions of Pan American, Eastern and the directors of Panagra who are nominees of Pan America, insofar as they relate to The New York-Balboa Through Service Proceeding.

E-5390 amends order No. E-5359 so as to permit Youth Argosy, in arranging for a maximum of 13 flights between the United States and Europe, in each direction, between May 15 and October 1, 1951, to provide air transportation of persons and their personal baggage, who, on or prior to March 23, 1951, made specific reservations, and such other members of Argosy who have made reservations subsequent to March 23, 1951, so as to assure full plane loads on the 13 flights (May 18).

E-5391 grants the City of New Orleans and the New Orleans Chamber of Commerce leave to intervene in the matter of the application of Peninsular Air Transport for an exemption (May 18).

E-5392, 5393, 5394 opinion and order exempt for one year, with stated conditions, Jack Carr Service and United Air-motive from the provisions of section 401 (a) of the Act so as to permit them to engage in air transportation of persons and property in the Anchorage area of Alaska; terminate temporary exemption held by Jack Carr Service pursuant to section 292.3 (a); denies applications insofar as they seek certificates. Approved by the President May 18, 1951 (March 29).

E-5395 authorizes Central Airlines to suspend service at Sherman-Denison, Texas, on segment 2 of route No. 81 until adequate airport facilities are available for use by it in scheduled operations; otherwise denies (May 21).

E-5396 grants Weir Alaska Airlines exemption for 6 months from the provisions of section 401 (a) of the Act, so as to permit it to engage in interstate air transportation of persons and property within the Territory of Alaska, without limitation as to regularity and frequency of service pursuant to contracts between it and the Military Establishment, or request of any Department in connection with contracts between other persons (May 22).

E-5397 denies application of Trans-Texas Airways for permission to omit service to Galveston, Texas, on all flights in excess of one round-trip daily (May 22).

E-5398, 5399 opinion and orders amend certificates of National Airlines, effective 60 days after date of approval by the President of the United States, subject to stated provision, so as to authorize National to make nonstop flights between Havana, Cuba, and any point on its route No. 31 which extends between

Suspensions and Revocations . . . CAB

Suspensions

Operating an experimental aircraft in close proximity to another plane and over a crowd of people—4 months from April 21 (Robert Stroop, Rome, Ga.—Commercial).

Performing acrobatics while carrying passengers not equipped with parachutes and nonconformance with airport traffic pattern—30 days from April 30 (Rudy Mantel, Atlanta, Ga.—Private).

Failure to check the weather before taking off and operating an aircraft in a control zone without permission of traffic control when the weather was below the minimum—6 months from May 14 (Bruce Andersen, Detroit, Mich.—Private).

Operating an aircraft when the weather was below the minimum for VFR flight (*The plane crashed when the weather closed in while the pilot was attempting to make an emergency landing.*)—3 months from April 30 (Norman Davis, Lewisville, Ind.—Private).

Operating an aircraft not airworthy—60 days from May 14 (Virgil Yohn, Rock Falls, Ill.—Student).

Failure to maintain proper distance from another plane when approaching for landing and nonconformance with airport traffic pattern—45 days from May 10 (Jerry Duncan, Des Moines, Iowa—Private).

Operating an aircraft in such proximity to another as to cause a collision hazard—30 days from May 24 (James Abrahamson, Laramie, Wyo.—Commercial).

Operating an aircraft outside the operating limitations and failing to maintain aircraft and engine log books (*The aircraft, overloaded by 129 pounds, failed to maintain altitude when just over a mesa at 6000 feet and crashed into it, demolishing the plane and seriously injuring the pilot and a passenger.*)—6 months from April 20 (H. D. Lile, Noab, Utah—Private).

Failure to observe the traffic pattern of the Municipal Airport, Grand Island, Neb.; operating an aircraft during instrument conditions without an instrument rating; and other violations—60 days from May 1 (Merlyn Wright, Brainard, Neb.—Commercial).

Leaving an aircraft unattended with the engine running—30 days from April 4 (Harrison Pederson, Hilton, S. Dak.—Private).

Low flying and performing acrobatics over a congested area—60 days from Jan. 3 (Theodore Eagan, East St. Louis, Ill.—Private).

Low flying and performing acrobatics over a congested area and buzzing the Marine Corps Base near Lindbergh Field, San Diego—90 days from April 27 (Richard Regen, San Diego, Calif.—Student).

Operating during instrument conditions without holding an instrument rating; flying within a control zone without traffic control approval, and not having a valid medical certificate—45 days from March 28 (Paul Briggs, Protection, Kans.—Private).

Low flight over farm buildings—30 days from June 22 (Lucien Caldwell, Baltimore, Md.—Commercial).

Operating an aircraft during the hours of dark-

ness without displaying position lights—60 days from June 15 (James Bell, Starke, Fla.—Private).

Operating an aircraft in a control zone without traffic control permission when the weather was below the minimum—60 days from June 26 (R. C. Chappell, Pine Bluff, Ark.—Private).

Low flying over a congested residential area—6 months from June 27 (Charles Brown, Tampa, Fla.—Private).

Low flying and performing acrobatics over a congested area—6 months from June 13 (Francis Sheehan, Jr., New York, N. Y.—Private).

Failing to observe the traffic pattern of the airport at Rome, Ga., and performing acrobatics within a civil airway and when the occupants were not equipped with parachutes—30 days from May 1 (Ricardo Mestre—Private).

Failing to have a medical certificate in his personal possession—10 days from June 22 (Oscar Meyer, Jr., Hendersonville, N. C.—Commercial).

Operating an aircraft within a control zone without the authorization of traffic control when the weather was below the minimum—30 days from June 14 (Stephen Bardill, Monticello, Ky.—Private).

Using unauthorized material in answering questions in an examination for an aircraft engine certificate—6 months from June 3 (Emlin Gruenfeldt, Santa Maria, Calif.—Private).

Low flying, carrying a passenger (a 9 year old girl) on a cushion in the baggage compartment, and other violations—4 months from May 25 (Robert Fishburn, Wichita, Kans.—Private).

Revocations

Continual buzzing in a congested area—Abe Holtry, Fort Eustis, Va. (Private).

Operating an aircraft on a passenger carrying flight, and other violations—Glenn Enslow, Plainview, Tex. (Student).

Operating an aircraft carrying passengers while under the influence of intoxicating liquor and flying when the weather was below the minimum—Stanley Fontaine, Tacoma, Wash. (Private).

Habitual careless repair work on aircraft—Albert Solis, Los Angeles, Calif. (A and E).

Repeated buzzing in a congested residential area—Maurice Gant, Jacksonville, Fla. (Private).

Low flying over a congested area (*During the last low flight the aircraft hit some power lines and crashed in the backyard of a home*)—Arnold Braskewell, Gastonia, N. C. (Private).

Carrying a passenger (*The aircraft stalled and crashed during an attempted landing*)—John Rupe, Rutland, Ill. (Student).

Low flying over a crowd of people (*During a turn at 100 foot altitude over a crowd attending a rodeo, the aircraft went into a partial spin and crashed in a nearby swamp*)—Jack Paculli, Norfolk, Va. (Private).

Repeated buzzing in a congested area at an altitude of 15 to 30 feet and performing acrobatics at a low altitude—Maurice Hughes, Eugene, Ore. (Private).

Key West and New York via Miami, Tampa, and other intermediate points. Approved by the President May 22, 1951 (Feb. 28).

E-5400 dismisses complaint of Aerovias "Q", S. A., with respect to a \$35.00 15-day limit round-trip excursion fare proposed by National Airlines (May 23).

E-5401 extends for 6 months from June 2, 1951, the temporary exemption granted Mid-Continent Airlines by orders Nos. E-4273 and E-4782, insofar as it permits it to furnish free transportation in interstate air transportation to technical employees of Consolidated-Vultee Aircraft Corporation and Pratt & Whitney Aircraft, Division of United Aircraft Corporation, subject to same conditions (May 23).

E-5402 amends order No. E-4555 so as to permit Southern Airways to omit a stop at Tuscaloosa, Ala., on all flights scheduled to arrive there during hours of darkness until such time as the Van De Graff Airport is adequate for its use after dark (May 23).

E-5403 dismisses application of Wisconsin Central Airlines for an exemption (May 23).

E-5404 extends from May 30, 1951, to August 27, 1951, the suspension of certain special rates for charter of Speedpak

units and other provisions proposed by Chicago and Southern Air Lines, insofar as applicable between points in the United States (May 23).

E-5405 authorizes Mid-West Airlines to suspend service temporarily at Creston, Iowa (May 23).

E-5406 denies request of Pioneer Air Lines for a further extension of the effective date beyond June 8, 1951, of the San Angelo-Fort Worth, restriction of service (May 23).

E-5407 denies motion of National Airlines to consolidate for hearing and decision the applications of Peninsular Air Transport and Aero Finance Corporations for exemptions (May 24).

E-5408 amends temporary certificate of All American Airways issued with E-5371 for segment 2 of route No. 97, to be effective June 1, 1951; otherwise denies petitions of Eastern Air Lines and All American (May 23).

E-5409 denies petition of Trans-World Airlines for reconsideration of the Board's opinion and order denying application for amendment of certificate to permit service to Santa Fe and Albuquerque, N. M., on the same flight (May 25).

(Continued on page 91)

Civil Aviation Highlights

	1951	1950
Airports and airfields recorded with CAA, July 1	6,276	6,449
By type:		
Commercial	2,160	2,453
Municipal	2,287	2,230
CAA Intermediate	66	127
Military	328	332
All others	1,435	1,307
a. Private use	1,281	1,167
b. Miscellaneous government	154	140
Civil airports and airfields by class		
Total	5,948	6,117
Class I and under	3,892	4,033
Class II	957	992
Class III	504	502
Class IV	377	370
Class V	136	138
Class VI and over	82	82
Total U. S. civil aircraft, July 1	90,784	92,440
Scheduled air carrier aircraft, July 1	1,215	1,170
Civil aircraft production, May		
Total	248	377
1- and 2-place models	54	114
3-, 4-, and 5-place models	179	256
Over 5-place models	15	7
Certificates approved, May		
Student pilots	4,130	3,979
Private pilots	1,932	2,251
Commercial pilots	538	439
Airline transport pilots	94	63
Mechanics (original certificates)	399	584
Ground instructors (original certificates)	42	103
Flight instructor ratings	191	165
Instrument ratings	322	108
Control tower operators	127	66
Traffic control activity, May		
Aircraft operations, CAA airport towers	1,601,253	1,526,251
Fix postings, CAA airport centers	1,023,228	1,038,482
Instrument approaches, CAA approach control towers	18,689	23,902
AIRPORT OPERATIONS		
Washington National, June		
Scheduled air carrier:		
Passengers departing	119,505	77,217
Passengers arriving	113,205	75,234
Aircraft arrivals and departures	12,657	10,102
Other aircraft arrivals and departures	4,013	3,247
San Francisco Municipal, May		
Scheduled air carrier:		
Passengers departing	61,065	50,497
Passengers arriving	57,910	49,013
Aircraft arrivals and departures	9,561	6,627
Other aircraft arrivals and departures	4,360	3,212
Oakland Municipal, May		
Scheduled air carrier:		
Passengers departing	10,734	5,233
Passengers arriving	10,011	4,850
Aircraft arrivals and departures	5,402	4,083
Other aircraft arrivals and departures	14,193	12,310
Miami International, May		
Scheduled air carrier:		
Passengers departing	57,075	50,367
Passengers arriving	49,913	44,589
Aircraft arrivals and departures	7,736	8,013
Other aircraft arrivals and departures	10,517	8,593
Los Angeles International, May		
Scheduled air carrier:		
Passengers departing	71,907	56,669
Passengers arriving	72,954	53,388
Aircraft arrivals and departures	9,284	8,483
Other aircraft arrivals and departures	6,725	5,777

¹ Airport type definitions: Commercial—Public use and public services, private control. Municipal—Public use and public services, public control. CAA Intermediate—No public services, CAA control. Military—No public services, military control. Other—(a) No public services, private control (b) No public services, Federal Government control (Forest service, etc.).

² The following is a breakdown of paved airports and unpaved airfields by class:

Class of facility	Paved Airports	Unpaved airfields	Totals
Class I and under	116	3,776	3,892
Class II	172	785	957
Class III	341	163	504
Class IV	337	40	377
Class V	129	7	136
Class VI and over	80	2	82
Totals	1,175	4,773	5,948

Scheduled Air Carrier Operations

[Source: CAB Form 41]

Domestic: May 1951

Operator	Revenue miles	Revenue passenger-miles	Revenue passenger miles (000)	Passenger seat miles (000)	Revenue passenger load factor (percent)	Ton-miles flown		
						Express	Freight	United States mail
Trunk Lines								
American Airlines.....	6,244,737	432,175	208,446	276,841	75.29	707,858	2,696,817	1,129,680
Braniff Airways.....	977,206	66,507	22,494	34,199	65.77	82,490	196,393	140,421
Capital Airlines.....	2,286,389	170,863	53,149	90,883	58.48	227,886	450,199	166,934
Chicago & Southern Air Lines.....	648,146	37,184	13,674	20,336	67.24	61,879	71,548	53,921
Colonial Airlines.....	323,691	19,499	4,929	9,240	53.34	8,688	9,073	8,723
Continental Air Lines.....	516,669	22,662	7,953	14,955	53.18	12,100	52,754	25,495
Delta Air Lines.....	1,362,697	74,195	31,471	47,737	65.93	100,180	260,407	132,841
Eastern Air Lines.....	4,623,906	291,699	120,837	196,018	61.65	402,192	415,976	470,101
Inland Air Lines.....	256,399	8,924	3,587	6,253	57.36	9,807	17,723	17,717
Mid-Continent Airlines.....	742,748	34,343	10,411	18,099	57.52	22,541	56,112	35,975
National Airlines.....	1,184,833	45,762	27,535	46,402	59.34	34,473	514,061	91,068
Northeast Airlines.....	365,609	35,730	6,727	11,162	60.27	15,626	24,585	13,080
Northwest Airlines.....	934,480	61,960	38,994	60,280	64.69	150,110	366,986	159,377
Trans World Airlines.....	4,309,814	188,840	130,559	168,792	77.35	609,044	1,318,776	910,751
United Air Lines.....	5,278,571	261,501	159,029	207,316	76.71	906,935	1,981,924	1,564,715
Western Air Lines.....	756,999	51,703	19,335	29,977	64.50	39,638	77,798	113,962
Trunk total.....	30,812,894	1,803,547	859,130	1,238,490	69.37	3,391,247	8,511,132	5,034,761
Feeder Lines								
All American Airways.....	279,753	18,306	2,572	5,875	43.78	12,518	0	5,431
Bonanza Air Lines.....	78,696	2,478	628	1,576	39.85	157	1,924	500
Central Airlines.....	119,749	2,445	345	2,184	15.80	0	0	1,890
Empire Air Lines.....	105,363	4,136	703	2,212	31.78	2,057	0	1,765
Frontier Airlines.....	380,240	8,271	2,108	7,605	27.72	8,165	32,278	10,871
Helicopter Air Service.....	29,356	0	0	0	—	0	0	2,069
Lake Central Airlines.....	95,070	3,107	479	2,250	21.29	7,683	0	986
Los Angeles Airways.....	30,863	0	0	0	—	0	0	4,765
Mid-Continent Airlines.....	83,272	3,718	775	1,749	44.31	4,181	3,499	2,160
Mid-West Airlines.....	73,552	260	37	295	12.54	0	0	1,087
Ozark Airlines.....	180,661	4,073	659	4,007	16.45	6,336	0	1,997
Piedmont Aviation.....	371,414	16,526	3,872	7,800	49.64	7,693	7,876	5,749
Pioneer Air Lines.....	333,481	14,063	3,540	8,004	44.23	3,631	15,108	9,416
Robinson Airlines.....	136,253	8,930	1,392	2,806	49.61	6,177	3,691	2,286
Southern Airways.....	267,813	8,074	1,405	5,617	25.01	8,706	0	8,274
Southwest Airways.....	212,779	11,229	2,126	4,468	47.58	4,073	11,811	4,876
Trans-Texas Airways.....	251,373	6,244	1,456	5,279	27.58	2,426	4,968	4,786
West Coast Airlines.....	121,630	7,395	1,086	2,554	42.52	1,042	3,571	812
Wiggins, E. W. Airways.....	57,690	452	42	216	19.44	384	0	160
Wisconsin-Central Airlines.....	168,792	8,949	1,465	3,543	41.35	10,970	0	4,658
Feeder total.....	3,377,900	128,656	24,690	68,400	36.29	86,199	84,726	74,538
Territorial Lines								
Caribbean-Atlantic Airlines.....	46,919	6,118	483	1,243	38.86	0	1,623	826
Hawaiian Airlines.....	253,089	25,099	3,228	5,376	60.04	8,982	68,277	3,835
Trans-Pacific Airlines (5/15/51).....	83,046	7,190	852	2,325	36.65	277	1,987	596
Territorial total.....	383,054	38,407	4,563	8,944	51.02	9,259	71,887	5,257
Grand total.....	34,573,848	1,970,610	888,383	1,315,474	67.53	3,486,705	8,667,745	5,114,556

International and Overseas: May 1951

Operator	Revenue miles	Revenue passenger-miles	Revenue passenger-miles (000)	Passenger seat miles (000)	Revenue passenger load factor (percent)	Ton-miles flown			
						Express	Freight	United States mail	Parcel post
American Airlines	242,068	9,110	6,469	11,997	53.92	747	136,343	12,435	0
Braniff Airways	267,876	2,496	5,237	12,905	40.58	0	109,523	11,842	0
Chicago & Southern Air Lines	143,902	1,909	2,389	6,650	35.92	0	67,886	2,672	160
Colonial Airlines	68,750	3,772	2,945	3,315	88.84	0	3,215	1,831	63
Eastern Air Lines	322,402	4,773	6,609	18,586	35.56	0	29,399	58,516	0
National Airlines	101,879	6,787	1,845	5,527	33.38	966	33,140	1,232	0
Northwest Airlines	565,726	6,944	11,422	21,958	52.02	21,186	596,333	145,853	0
Pan American World Airways:									
Atlantic Division	1,330,404	30,884	43,216	63,592	67.96	1,022,850	0	328,145	100,327
Latin American Division	2,467,977	68,888	52,789	96,536	54.68	1,991,050	0	260,679	0
Alaska Operations	247,073	4,632	4,687	11,112	42.18	465,569	0	40,012	0
Pacific Operations	760,989	6,174	22,587	36,371	62.10	666,047	0	439,464	0
Pan American-Grace Airways	498,158	9,815	10,353	17,805	58.15	217,438	0	30,133	7,858
Trans World Airlines	983,662	11,913	29,712	41,846	71.00	0	431,238	288,379	53,720
United Air Lines	259,076	3,367	8,307	13,791	60.23	0	45,582	74,278	0
Uruba, Medellin & Central Airways	9,184	228	75	184	40.76	4,650	0	0	0
Total	8,264,126	171,692	208,642	362,175	57.61	4,390,503	1,452,659	1,690,471	162,128

Domestic Passenger Miles Flown (Total revenue and nonrevenue, in thousands)

	January	February	March	April	May	Total
Trunk	744,984	689,234	864,819	865,751	890,976	4,055,764
Feeder	18,080	17,205	22,774	24,014	28,831	110,904
Territorial	3,886	3,613	4,459	3,759	4,727	20,444
Total	766,950	710,052	892,052	893,524	924,534	4,187,112

Scheduled Air Carrier Operations

(Continued on page 92)

International and Overseas: January-May 1951, 1950

Operator	Revenue miles January-May		Revenue passengers January-May		Revenue passenger miles (000) January-May		Passenger seat miles (000) January-May		Revenue passenger load factor (percent) January-May	
	1951	1950	1951	1950	1951	1950	1951	1950	1951	1950
American Airlines	1,193,929	948,458	49,112	35,291	37,426	27,208	61,444	45,699	60.91	59.54
American Overseas Airlines (ceased opr. 9/26/50)	—	2,171,840	—	45,940	—	69,398	—	108,679	—	63.86
Braniff Airways	1,316,133	882,593	11,371	6,473	23,529	13,812	57,401	37,639	40.99	36.70
Chicago & Southern Air Lines	692,681	888,073	11,122	9,351	12,709	11,570	31,606	36,468	40.21	31.73
Colonial Airlines	319,069	169,698	16,610	4,768	13,053	8,803	16,591	7,539	78.68	50.44
Eastern Air Lines	869,962	306,899	15,931	6,818	20,322	7,090	50,806	15,219	40.00	46.59
National Airlines	580,009	323,889	49,338	33,814	12,992	9,086	31,505	18,017	41.24	50.43
Northwest Airlines	2,518,744	2,483,655	25,687	17,562	44,397	32,933	90,427	65,243	49.10	50.48
Pan American World Airways:										
Atlantic Division	6,035,493	4,698,965	133,250	55,167	180,026	117,009	279,613	175,050	64.38	66.84
Latin American Division	11,464,072	11,363,447	336,571	292,287	267,065	223,033	447,478	398,865	59.68	55.92
Alaska Operations	1,005,587	846,298	16,280	13,425	17,002	18,177	44,844	27,908	37.91	47.22
Pacific Operations	3,662,559	3,988,861	28,965	30,120	101,066	81,762	179,890	168,237	56.18	48.60
Pan American-Grace Airways	2,398,522	2,357,370	49,071	39,860	52,793	42,068	87,034	88,671	60.66	47.44
Trans World Airlines	4,823,011	4,748,298	47,804	41,392	122,335	110,637	210,420	170,856	58.14	64.75
United Air Lines	1,264,452	768,201	14,433	8,980	35,568	21,552	64,723	39,486	54.95	54.58
Uruba, Medellin & Central Airways	43,296	41,520	1,076	1,062	353	350	867	722	40.72	48.48
Total	38,187,519	37,088,071	806,621	642,310	940,636	784,488	1,654,649	1,404,298	56.85	55.86
Index (1950=100)	102.96	100.00	125.58	100.00	119.90	100.00	117.83	100.00	101.77	100.00

Ton-miles flown

Operator	Express January-May		Freight January-May		United States mail January-May		Parcel post January-May	
	1951	1950	1951	1950	1951	1950	1951	1950
American Airlines	4,371	4,627	613,078	530,712	64,640	49,406	0	0
American Overseas Airlines (ceased opr. 9/26/50)	—	1,078,832	—	—	—	529,455	—	156,528
Braniff Airways	0	0	509,477	277,881	51,659	10,915	0	0
Chicago & Southern Air Lines	0	0	280,333	270,563	13,533	10,841	940	921
Colonial Airlines	0	0	22,906	27,445	7,260	1,155	597	323
Eastern Air Lines	0	0	87,435	180,398	125,975	25,489	0	1,788
National Airlines	7,300	94,304	125,674	0	5,314	5,640	0	0
Northwest Airlines	183,957	39,756	2,716,533	2,139,132	725,052	849,707	0	0
Pan American World Airways:								
Atlantic Division	4,536,446	3,065,245	0	0	1,556,650	971,657	433,439	279,223
Latin American Division	9,829,854	8,908,306	0	0	1,224,724	1,147,331	0	0
Alaska Operations	1,775,041	1,550,584	0	0	167,822	150,959	0	0
Pacific Operations	2,555,265	2,000,461	0	0	2,254,161	2,370,117	0	0
Pan American-Grace Airways	912,319	701,710	0	0	141,093	147,449	31,599	6,256
Trans World Airlines	0	0	2,482,295	2,203,827	1,418,930	1,073,534	232,962	179,613
United Air Lines	0	0	212,948	118,471	342,249	241,747	0	0
Uruba, Medellin & Central Airways	24,113	12,404	0	0	0	0	0	0
Total	19,728,696	17,456,229	7,050,679	5,748,429	8,099,062	7,585,402	699,537	624,652
Index (1950=100)	113.02	100.00	122.65	100.00	106.77	100.00	111.99	100.00

Official Actions CAB

(Continued from page 89)

E-5410 grants World Airways a hearing on its application for an exemption pursuant to Section 291.16 of the Board's Economic Regulations (May 25).

E-5411 grants Monarch Air Service a hearing on its application for an exemption pursuant to Section 291.16 of the Board's Economic Regulations (May 25).

E-5412 dismisses proceeding in the matter of interlocking control and other relationships between Arrow Airways and California Arrow (May 28).

E-5413 opinion and order, supplemental to the Board's opinion of September 29, 1950, submitted to the President, grant temporary certificates to Pacific Northern Airlines and Alaska Airlines authorizing service between points in the United States and Alaska. Approved by the President May 25, 1951 (May 24).

E-5414 institutes an investigation of, and suspends through August 23, 1951, charter rules, regulations, rates and charges proposed by The Flying Tiger Line (May 25).

E-5415 fixes certain temporary mail rates for E. W. Wiggins Airway over its entire system (May 28).

E-5416 denies petition of Eastern Air Lines for reconsideration of the Board's order No. E-5253 in the matter of the application of United Air Lines for an amendment of its certificate for route No. 1 (May 29).

E-5417 authorizes Trans World Airlines to inaugurate nonstop service on or about June 1, 1951, between Boston, Mass., and Paris, France (May 29).

E-5418 permits the Traffic Association and the Chamber of Commerce of Seattle, the County and the City of Walla Walla, the Walla Walla City-County Airport Board, and the City of Yakima, all of Washington, to intervene in the *Empire Certificate Renewal* case (June 7).

E-5419 denies application of All American Airways for an exemption which would permit it to engage in certain air transportation as authorized by Part 291; terminates temporary exemption (May 31).

E-5420 grants The Flying Tiger Line exemption from June 1, 1951, to Sept. 30, 1951, from the provisions of section 401 (a) of the Act, Part 207 of the Economic Regulations, and section 302.20 of the Procedural Regulations so as to permit it to perform air transportation on behalf of Argosy only, between the United States and Europe, pursuant to provisions of order No. E-5359 as amended by E-5390, subject to stated conditions (May 31).

E-5421 denies application of Airnews, Inc. for an exemption which would permit it to serve segments 1 and 2 of its route No. 103 as a single segment between stated points in Texas, and from the condition contained in its certificate requiring certain truck service (May 31).

E-5422 orders Airnews, Inc. to show cause why its certificate should not be suspended or revoked, and directs it to file a full and complete answer; consolidates complaint of Braniff Airways (Docket No. 4831) and makes it a party to this proceeding; orders that the matter be assigned for public hearing before an examiner of the Board at a time and place to be designated (May 31).

E-5423 denies petition of the Air Line Pilots Association, International, to include the issue of pilot protective conditions in the reopened *North Atlantic Route Transfer* case (June 1).

E-5424 opinion and order amend certificate of Ellis Air Lines so as to authorize air transportation of persons and property (except mail) over a regular route between Ketchikan, Alaska, and Prince Rupert, B. C., Canada. Approved by the President May 29, 1951 (May 4).

E-5425 denies application of Pearson-Alaska, Inc., for an exemption which would permit it to engage in certain air transportation as authorized by Part 291; terminates temporary exemption (June 1).

E-5426 severs from Docket No. 4529 and assigns Docket No. 4968 to that portion of Docket No. 4529, as amended in Amendment No. 1 filed March 29, 1951, by Continental Airlines, proposing service between Kansas City, Mo., and Tulsa, Okla., via Bartlesville, Okla.; consolidates for hearing with Docket No. 2936; otherwise denies motions and requests of Mid-Continent and Continental (June 1).

E-5427 dismisses the proceeding of investigation and suspension instituted by order No. E-5080 in the matter of certain excursion fares proposed by Pan World Airways and Braniff Airways (June 5).

E-5428 authorizes Northeast Airlines to inaugurate service, on or about June 1, 1951, at Berlin, N. H., on route No. 27 through use of the Berlin Municipal Airport (June 5).

E-5429 amends order No. E-4985 so as to exempt Kodiak Airways from the provisions of section 401 (a) of the Act and permit to engage, until December 31, 1951, in charter service to cannery operators in stated areas of Alaska (June 7).

E-5430 authorizes Ozark Airlines to suspend service at LaSalle-Ottawa, Ill., on segment 1 of its route No. 107, until such time as adequate airport facilities are available for scheduled air carrier operations (June 8).

E-5431 authorizes Ozark Airlines to inaugurate service on

June 11, 1951, to Rockford, Ill., through use of the Greater Rockford Airport (June 8).

E-5432 grants American Airlines, Mid-Continent Airlines, the City and the Chamber of Commerce of Tulsa, Okla., leave to intervene in the matter of the application of Braniff Airways for inclusion of Tulsa on its route No. 9 (June 8).

E-5433 authorizes Northeast Airlines to suspend service to Brunswick, Maine, on its route No. 27, from June 1, 1951, until such time as an adequate airport is available for use by Northeast (June 8).

E-5434 orders Bonanza Air Lines to show cause why the Board should not fix certain temporary mail rates over its entire system (June 8).

E-5435 grants The Flying Tiger Line exemption, between June 17, 1951, and September 30, 1951, from the provisions of section 401 (a) of the Act, Part 207 of the Economic Regulations, and section 302.20 of the Procedural Regulations so as to permit it, upon stated conditions, to perform one round-trip flight on behalf of the Associated Students of the University of California and/or the Regents of the University of California, only, between the United States and Europe (June 8).

E-5436 denies "Further Petition" of Eastern Air Lines for reconsideration of the Board's order No. E-5293 which granted an exemption to Conner Air Lines (June 8).

E-5437 denies "Further Petition" of Eastern Air Lines for reconsideration of the Board's order No. E-5161 which granted an exemption to Standard Air Cargo (June 8).

E-5438 approves certain agreements involving Slick Airways, Oceanic Forwarding Co., various air carriers, and other carriers, relating to intercompany arrangements (June 12).

E-5439 opinion and order amend certificate of All American Airways for route No. 97 so as to extend segment 3 beyond Harrisburg, Pa., to the terminal point Scranton-Wilkes-Barre, Pa.; otherwise denies (June 12).

E-5440 fixes certain temporary mail rates for Ozark Airlines over its entire system (June 13).

E-5441 orders information contained in agreement and letter filed May 16, 1951, by Trans World Airlines withheld from public disclosure until further order of the Board (June 13).

E-5442 extends from June 24, 1951, to September 21, 1951, the period of suspension of certain round-trip air tour fares, and the rules and regulations relating thereto, proposed by Delta Air Lines (June 14).

E-5443 fixes certain temporary mail rates for Bonanza Air Lines over its entire system (June 14).

E-5444 approves, subject to stated conditions, certain agreements involving Air Traffic Conference of America relating to the establishment of the Air Traffic Conference Military Bureau (June 14).

Target Devised by CAA For Testing Light 'Guns'

The light "guns" used in airport traffic control towers to direct traffic now have—appropriately enough—a target.

The Civil Aeronautics Administration has developed a paper target to be used by its technicians in checking the guns on the ground for accuracy, and for setting the sights.

Light guns are used to give signals to aircraft which do not have radio. They resemble a short section of stovepipe, and are used to direct a ray of red, green, or white light with great accuracy toward one airplane in flight. They must be carefully and continuously sighted on the plane, and the signal will be received by one plane and one only, if the gun is accurately focused and the sights are correct.

Focusing and sighting light guns requires technical skill, and certain definite procedures must be followed. The new targets, consisting of a cross within a shaded circle about 8 inches in diameter, which can be set up in the average tower, will make it easier for CAA maintenance technicians to service the guns and keep them operating with accuracy.

Federal Airways Facilities

The following is a tabulation of the facilities maintained and operated by CAA's Office of Federal Airways as of June 30, 1951:

Civil Airways:	
Controlled Civil Airways, Mileage.....	71,859
Non-controlled Civil Airways, Mileage.....	4,419
Oceanic Routes, Mileage.....	25,141
Landing Areas:	
Intermediate Fields.....	93
Jointly Operated Fields.....	48
Lighting Aids:	
Airways Beacons (excluding those at landing areas).....	936
Neon Approach Light Lanes.....	82
High Intensity Approach Light Lanes.....	26
Navigation and Landing Aids:	
L/MF Ranges.....	378
VHF Visual Aural Ranges.....	44
L/MF Omnidirections.....	1,316
L/MF Omnidirections.....	0
High Power Non-directional Radio Beacons.....	4
Low/Medium Power Non-directional Radio Beacons.....	146
Fan Markers.....	282
Instrument Landing Systems.....	98
Airport Surveillance Radar.....	9
Precision Approach Radar.....	9
Communications Facilities:	
INSACS (Not including those at OFACS).....	436
OFACS.....	16
Traffic Control Facilities:	
Airport Traffic Control Towers.....	164
Combined Tower/Stations.....	11
Air Route Traffic Control Centers.....	32
Mechanical Interlocks.....	17
Teletype and Interphone Services:	
Weather Reporting Circuits.....	
Teletype Mileage—A, C & O.....	83,124
Teletype Drops—A, C & O.....	935
Traffic Control Circuits:	
Teletype Mileage—B.....	34,611
Teletype Drops—B.....	504
Interphone Mileage—F.....	61,757
Interphone Drops—F.....	3,318

11 Operating on test—305 commissioned.

Development of New Aircraft

(Continued from page 85)

luxurious type of airplane than that covered in our specifications.

"Investigation indicates that there is no turbine powered aircraft in the near future that will be able to provide New York-London or New York-Paris non-stop scheduled airline service."

The European Group consisted of Kenneth Gordon, airframe engineer of the Boeing Airplane Company; Ray Small, powerplant engineer of the General Electric Co.; Otto Kirchner, airline engineer of American Airlines; William A. Moss, trans-ocean pilot of Pan American World Airways; and Harold Hoekstra, executive secretary of the Prototype Committee.

Scheduled Air Carrier Operations

(Continued on page 93)

Domestic: January-May 1951, 1950

Operator	Revenue miles January-May		Revenue passengers January-May		Revenue passenger-miles (000) January-May		Passenger seat-miles (000) January-May	
	1951	1950	1951	1950	1951	1950	1951	1950
Trunk Lines								
American Airlines.....	27,067,284	21,822,566	1,806,849	1,174,669	889,863	584,268	1,173,975	934,367
Braniff Airways.....	4,717,596	4,601,456	307,544	243,663	104,616	81,458	165,605	159,306
Capital Airlines.....	9,614,621	7,834,488	684,275	472,879	212,749	139,025	370,886	282,325
Chicago & Southern Air Lines.....	3,126,412	2,983,389	166,324	121,164	61,978	43,642	92,949	81,960
Colonial Airlines.....	1,444,357	1,191,894	87,151	61,758	22,308	16,309	41,997	33,636
Continental Air Lines.....	2,498,480	2,315,725	98,564	74,081	35,485	25,591	71,983	65,286
Delta Air Lines.....	6,947,633	6,044,955	351,436	252,260	171,321	117,465	255,671	203,323
Eastern Air Lines.....	24,482,615	22,759,696	1,457,901	1,023,710	708,212	521,476	1,081,841	840,505
Inland Air Lines.....	1,208,285	1,185,553	38,741	32,145	15,349	12,157	29,207	23,715
Mid-Continent Airlines.....	3,298,974	3,441,685	148,585	182,239	45,201	38,491	81,007	72,276
National Airlines.....	6,685,319	5,068,074	274,855	171,832	190,091	112,155	282,207	200,878
Northeast Airlines.....	1,839,388	1,375,758	156,306	111,838	29,258	20,860	50,460	43,403
Trans World Airlines.....	4,681,029	8,247,190	224,798	292,751	144,115	172,849	264,976	350,052
United Air Lines.....	19,881,733	17,767,731	783,563	543,099	550,191	364,778	781,908	624,907
United Air Lines.....	22,684,160	21,032,692	1,091,896	836,381	648,634	472,100	884,389	786,722
Western Air Lines.....	3,461,577	3,043,233	238,119	129,116	86,294	48,365	137,304	110,988
Trunk Total.....	143,439,463	130,716,085	7,916,907	5,673,653	3,915,665	2,770,989	5,766,365	4,813,649
Index (1950=100).....	109.73	100.00	139.54	100.00	141.31	100.00	119.79	100.00
Feeder Lines								
All American Airways.....	1,239,410	1,153,390	69,388	44,526	9,723	6,269	26,028	24,217
Bonanza Air Lines.....	376,114	368,264	11,772	6,545	2,993	1,618	7,650	7,178
Central Airlines.....	381,797	714,512	8,047	3,037	1,330	351	9,326	2,144
Empire Air Lines.....	512,045	439,579	18,665	15,473	3,244	3,044	10,752	9,231
Frontier Airlines.....	1,801,582	1,237,734	35,665	19,110	9,075	5,134	36,032	23,267
Helicopter Air Service.....	130,956	130,686	0	0	0	0	0	0
Lake Central Airlines.....	434,654	294,634	10,110	3,290	1,628	509	9,746	3,288
Los Angeles Airways.....	147,870	139,876	0	0	0	0	0	0
Mid-Continent Airlines.....	381,137	—	15,121	—	2,981	—	8,004	—
Mid-West Airlines.....	309,821	593,445	973	2,433	135	354	1,241	2,372
Ozark Air Lines.....	630,818	—	12,877	—	1,979	—	11,556	—
Piedmont Aviation.....	1,550,088	1,371,731	64,678	40,565	14,892	8,329	32,553	28,807
Pioneer Air Lines.....	1,548,496	1,532,732	61,974	47,545	16,119	12,810	37,164	36,888
Robinson Airways.....	582,180	434,113	34,552	18,982	5,358	1,912	11,300	8,392
Southern Airways.....	1,150,251	711,461	32,836	11,098	5,895	1,912	24,105	14,903
Southwest Airways.....	1,011,631	947,656	54,689	39,550	10,335	7,213	21,255	19,901
Trans-Texas Airways.....	1,155,469	1,220,780	28,433	20,966	6,820	4,743	24,265	25,635
West Coast Airlines.....	503,440	485,458	25,082	22,330	3,647	3,149	10,571	10,195
Wiggins, E. W., Airways.....	268,877	126,319	1,724	830	159	73	1,058	500
Wisconsin-Central Airlines.....	750,556	801,220	27,667	16,423	4,361	2,522	10,459	6,525
Feeder Total.....	15,047,192	12,703,590	514,253	312,703	100,684	61,006	293,065	223,443
Index (1950=100).....	118.45	100.00	164.45	100.00	165.04	100.00	131.16	100.00
Territorial Lines								
Caribbean-Atlantic Airlines.....	258,082	234,938	40,901	32,035	3,222	2,592	6,949	5,823
Hawaiian Airlines.....	1,210,372	1,120,068	123,959	123,436	15,970	15,965	25,968	24,725
Trans-Pacific Airlines.....	83,046	—	7,190	—	852	—	2,325	—
Territorial Total.....	1,551,500	1,355,006	172,050	155,471	20,044	18,557	35,242	30,548
Index (1950=100).....	114.50	100.00	110.66	100.00	108.01	100.00	115.37	100.00
Grand Total.....	160,038,155	144,774,681	8,603,210	6,141,827	4,036,393	2,850,552	6,094,672	5,067,640
Index (1950=100).....	110.54	100.00	140.08	100.00	141.60	100.00	120.27	100.00

Small-Plane Flights Outside U.S. Required to File With Customs

Anyone flying a U. S. registered personal type aircraft into a foreign country for visits of 6 months or less must file a declaration of temporary sojourn with the United States Collector of Customs at the place of departure, the Civil Aeronautics Administration warns.

Reports to the CAA indicate that many personal pilots making trips into Canada are being inconvenienced because they are not aware of this requirement.

Aircraft are designated as implements of war and as such are subject to export licensing requirements but 1 to 4-place planes are exempt from the licensing regulation if the owner or operator files a written statement that the trip outside the country is for 6 months or less. This declaration need not be sworn to and may cover several departures and returns of the particular aircraft during the 6-month period.

While the Bureau of Customs does not provide forms for making the declaration, which may be made by mail or in person, information regarding the data required may be obtained from any Collector of Customs office.

CAA Assigns Three Experts To South American Countries

Three aviation consultants have been assigned by the Civil Aeronautics Administration to Ecuador and Venezuela as a part of U. S. cooperation with other countries through the Point Four Program.

Carl A. Posey, Airport Engineer, and Raymond M. Dudley, Communications Engineer, have been assigned to the Ecuadorian government, and Royce G. Kunze, a CAA Air Carrier Safety Agent, will head the Civil Aviation Mission to Venezuela. All are employees of the Technical Assistance Division of the CAA's International Region, which now has aviation missions at work in Bolivia, Colombia, Panama, and Greece, as well as Venezuela and Ecuador.

Posey, who will head the Mission to Ecuador, has engineered airport projects in many of the Latin American countries during his 21 years with the Federal government. He is the author of a number of studies relating to airport construction work. Dudley has had 16 years experience in aviation communications with the CAA and the Navy, and has served with the CAA mission in Peru. Kunze has had 12 years of experience with the CAA and the Air Force and has been Chief of the mission to Colombia.

Scheduled Air Carrier Operations

(Continued from page 92)

Domestic: January-May 1951, 1950

Operator	Revenue passenger load factor (percent) January-May		Ton-miles flown					
			Express January-May		Freight January-May		United States mail January-May	
	1951	1950	1951	1950	1951	1950	1951	1950
Trunk Lines								
American Airlines.....	75.80	62.53	3,859,047	2,306,507	14,375,871	11,910,280	5,566,705	3,691,179
Braniff Airways.....	63.17	51.13	489,497	393,262	825,133	627,567	650,151	508,103
Capital Airlines.....	57.36	49.24	1,128,832	867,672	2,103,032	3,180,219	762,880	566,250
Chicago & Southern Air Lines.....	66.68	53.25	317,983	209,831	332,701	333,684	262,399	231,167
Colonial Airlines.....	53.12	48.49	40,685	28,976	45,723	36,910	43,890	35,509
Continental Air Lines.....	49.30	39.20	58,637	39,551	245,056	180,453	109,108	81,782
Delta Air Lines.....	67.01	57.77	523,044	356,139	1,531,004	1,037,746	703,499	482,303
Eastern Air Lines.....	65.46	62.04	2,466,592	1,647,525	2,198,094	5,279,274	2,381,863	2,031,615
Inland Air Lines.....	52.55	51.26	38,221	22,242	63,766	53,060	86,559	43,437
Mid-Continent Airlines.....	55.80	53.26	108,586	89,849	229,809	188,250	166,150	129,794
National Airlines.....	67.36	55.83	202,021	321,880	2,237,117	961,121	441,871	291,186
Northeast Airlines.....	57.98	48.06	91,285	63,502	104,461	88,715	58,682	44,997
Northwest Airlines.....	54.39	49.38	820,294	681,077	1,733,127	2,530,734	811,354	1,086,803
Trans World Airlines.....	70.37	58.37	3,594,178	2,080,398	6,522,038	4,696,216	4,592,200	3,424,957
United Air Lines.....	73.34	60.01	4,826,515	3,128,766	10,533,854	10,208,947	6,756,311	4,514,519
Western Air Lines.....	62.85	43.58	187,603	189,621	320,329	276,817	474,092	276,271
Trunk Total.....	67.91	57.57	18,753,120	12,426,798	43,401,115	41,589,993	23,867,714	17,438,872
Index (1950=100).....	117.96	100.00	150.91	100.00	104.35	100.00	136.87	100.00
Feeder Lines								
All American Airways.....	37.36	25.89	63,655	39,264	0	0	20,512	16,350
Bonanza Air Lines.....	39.12	22.54	943	562	6,139	3,894	2,136	2,038
Central Airlines.....	14.26	16.37	0	0	0	0	8,280	6,499
Empire Air Lines.....	30.17	32.98	7,413	5,898	0	0	9,340	7,259
Frontier Airlines.....	25.19	22.07	28,497	18,751	111,848	57,212	44,322	21,894
Helicopter Air Service.....	0	0	0	0	0	0	9,343	7,594
Lake Central Airlines.....	16.70	15.48	48,604	5,934	0	0	6,144	1,886
Los Angeles Airways.....	0	0	0	0	0	0	21,379	17,405
Mid-Continent Airlines.....	37.24	—	19,264	—	16,458	—	7,823	—
Mid-West Airlines.....	10.88	14.92	0	0	0	0	3,359	6,891
Ozark Air Lines.....	17.13	—	27,466	—	—	—	5,580	—
Piedmont Aviation.....	45.75	28.91	40,972	24,063	51,341	37,365	24,928	18,409
Pioneer Air Lines.....	43.37	34.73	20,108	17,229	61,218	48,498	42,398	39,504
Robinson Airlines.....	47.50	35.46	26,208	13,406	16,513	12,716	10,866	8,630
Southern Airways.....	24.46	12.89	39,031	15,352	0	0	36,694	16,692
Southwest Airways.....	48.62	36.24	19,151	16,522	68,365	54,799	21,644	18,833
Trans-Texas Airways.....	28.11	18.50	12,441	11,054	25,728	22,207	19,421	21,557
West Coast Airlines.....	34.50	30.89	4,102	4,890	18,931	0	3,016	3,308
Wiggins, E. W., Airways.....	15.03	14.60	528	0	0	0	614	645
Wisconsin-Central Airlines.....	41.70	38.65	34,674	15,760	0	0	19,728	13,215
Feeder Total.....	34.36	27.30	387,057	188,685	376,541	236,691	317,527	228,659
Index (1950=100).....	125.86	100.00	205.13	100.00	159.09	100.00	138.86	100.00
Territorial Lines								
Caribbean-Atlantic Airlines.....	46.37	44.51	0	0	10,012	11,378	3,832	4,498
Hawaiian Airlines.....	61.50	64.57	43,157	50,829	287,402	169,558	17,843	22,744
Trans-Pacific Airlines.....	36.65	—	277	—	1,987	—	596	—
Territorial Total.....	56.86	60.75	43,434	50,829	299,401	180,936	22,271	27,242
Index (1950=100).....	93.60	100.00	85.45	100.00	165.47	100.00	81.75	100.00
Grand Total.....	66.23	56.25	19,183,611	12,666,312	44,077,057	42,007,620	24,207,512	17,694,773
Index (1950=100).....	117.74	100.00	151.45	100.00	104.93	100.00	136.81	100.00

Helpful Publications

Publications listed below are on sale by the Superintendent of Documents, Government Printing Office, Washington 25, D. C. Orders must be accompanied by money order or check made payable to the Superintendent of Documents.

Flight Assistance

Airman's Guide and Flight Information Manual.....\$6 a year

(The Airman's Guide, published every 2 weeks, contains three sections: Directory of Airports, Radio Facility Data, and Notices to Airmen. The Flight Information Manual supplements the Airman's Guide and is issued semiannually.)

Airports

Airport Buildings.....20 cents
(Problems of airport building design are discussed and several solutions suggested.)

Airport Design.....30 cents
(Provides basic information on airport construction.)

Airport Drainage.....30 cents
(Contains information helpful in developing an efficient and economical airport drainage system.)

Airport Landscape Planting.....15 cents
(Provides practical information on how to improve the appearance of an airport.)

Airport Turfing.....25 cents
(Describes various problems involved and presents methods used in establishing and maintaining a good turf.)

Seaplane Facilities.....25 cents
(Answers problems posed by the planning and construction of seaplane bases.)

Small Airports.....15 cents
(Answers to many problems confronting communities or individuals who want to build a small airport.)

Standard Specifications for Construction of Airports.....\$2.25
(Contains specification items for construction of airports and air parks. Covers clearing and grubbing, grading, drainage, paving, lighting, turfing, and incidental construction.)

Flight Training

Aircraft Powerplant Handbook.....\$1.25
(For students, mechanics, pilots, and engineers who have only superficial knowledge of aircraft powerplant fundamentals.)

Facts of Flight.....50 cents
(A nontechnical manual, with chapters on airplane flight, stalls, spins, airplane structure, airplane engines, flying the plane, airport traffic, seaplanes, and safety in flight.)

Flight Instruction Manual.....\$1.50
(A complete text on flight training for student and instructor. Includes acrobatic maneuvers.)

Path of Flight.....75 cents
(Practical information about basic navigation of aircraft, presented in brief form for the use of the private pilot.)

Realm of Flight.....60 cents
(Presents practical information about the effect of atmospheric conditions upon flight.)

Personal Aircraft Inspection Manual.....55 cents
(Contains information dealing with the fundamentals of inspection and provides a general maintenance guide for the owners of personal type aircraft.)

Miscellaneous

ANC Procedures for the Control of Air Traffic.....40 cents
(Officially approved manual of air traffic control procedures adopted for use by civil and military air traffic control personnel. These procedures are required to be followed by all civil controllers holding certificates under Part 26 of the CAR.)

Industrial Flying.....10 cents
(A brief description of various uses for the airplane in industrial flying.)

Student Pilot Guide.....10 cents
(Presents information of particular importance to student pilots during the early stages of flight training.)

Terrain Flying.....25 cents
(Describes the special problems and hazards encountered in flying over various kinds of terrain and proper precautions.)

The Air Fair.....20 cents
(Gives detailed help in planning and operating an air fair.)

Written Test for Pilot Applicants

(Continued from page 85)

and 10 hours of solo practice shall have been in cross-country flight, including one flight with a landing at least 100 miles from the point of departure. All flights logged as cross-country shall include a landing at least 25 miles from the point of departure.

The flight test includes the prevention and recovery from stalls entered from all normally anticipated flight attitudes, turns around a point or area on the ground, accurate approaches and landings using power and flaps at the discretion of the applicant, a demonstration of cross-country flight planning and flying, cross-wind take-offs and landings, and short or soft-field take-offs.

Buzzing Evidence of Incompetence

Airport operators, instructors and older pilots should emphasize the idea that buzzing and show-off flying are evidences of incompetence. The pilot who really knows his stuff stays up in the air with plenty of flying speed. A pilot likes to be considered daring, but it is far from being pleasant to be considered incompetent. Real confidence is based on safe flying—not foolish daring.

Decrease Noted During May

In Aircraft Engine Shipments

May 1951 shipments of civil aircraft engines numbered 384, representing 216,100 horsepower, valued at \$2,754,000, according to a report issued jointly by the Civil Aeronautics Administration and the Bureau of the Census, Department of Commerce. The April 1951 shipments amounted to a total of 404. Comparable figures for May 1950 show 337 engines, representing 167,900 horsepower, valued at \$2,143,000. Average unit value per civil aircraft engine this year was \$7,172 against \$6,359 a year ago.

Civil Aircraft Engine Shipments

	1951		1950 May
	May	April	
Number (total).....	384	404	337
Horsepower output (thousand).....	216.1	200.5	167.9
Value (thousand dollars).....	\$2,754	\$2,485	\$2,143
Complete engines.....	5,007	5,145	3,864
Parts.....	523	732	211
Other products.....	—	—	—

Regulations of The Administrator

Through August 1, 1951

Note: Regulations of the Administrator marked with an asterisk (*) on the list given below may be obtained from the Superintendent of Documents, United States Government Printing Office, Washington 25, D. C., at the prices indicated. Remit check or money order, made payable to the Superintendent of Documents, directly to the Government Printing Office. Copies of amendments may be obtained free of charge from the Office of Aviation Information, CAA, Washington 25, D. C., or may be found in the Federal Register for the dates indicated in parentheses. Copies of the Federal Register are obtainable from the Superintendent of Documents.

Organization

*Part 400—Organization and Functions. (10¢.)
Amendment 1. (July 11, 1951.)

Procedures

*Part 405—General Procedures. (5¢.)
*Part 406—Certification Procedures. (10¢.)
*Part 407—Recordation Procedures. (5¢.)
*Part 408—Enforcement Procedures. (5¢.)
Amendment 1. (April 26, 1951.)

Rules

Airmen

*Part 450—Inter-American Aviation Training Grants. (5¢.)

Aircraft

Part 501—Aircraft Registration Certificates. (April 28, 1951.)
*Part 502—Dealers' Aircraft Registration Certificates. (5¢.)
*Part 503—Recordation of Aircraft Ownership. (5¢.)
*Part 504—Recordation of Encumbrances Against Specifically Identified Aircraft Engines. (5¢.)
*Part 505—Recordation of Encumbrances Against Aircraft Engines, Propellers, Appliances, or Spare Parts. (5¢.)
Part 506—Aircraftworthiness Directive Recordation. (May 1, 1951.)
Part 514—Technical Standard Orders — C Series — Aircraft Components. (January 25, 1951.)

Airports

*Part 550—Federal Aid to Public Agencies for Development of Public Airports. (10¢.)
(Amendments 1-14 available from CAA.)
*Part 555—Acquisition of Government-owned Lands for Public Airport Purposes. (5¢.)
*Part 560—Reimbursement for Damage to Public Airports by Federal Agencies. (10¢.)
(Amendment 1 available from CAA.) Amendment 2 (June 29, 1951.)
*Part 570—Rules of Washington National Airport. (5¢.)
(Amendment 1 available from CAA.) Amendment 2 (March 28, 1951.)
*Part 575—Federal Civil Airports on Canton and Wake Islands. (5¢.)

Air Navigation

*Part 600—Designation of Civil Airways (including amendments 1 through 10). (15¢.)
(Amendments 19-52 available from CAA.)
*Part 601—Designation of Control Areas, Control Zones and Reporting Points (including amendments 1 through 22). (15¢.)
(Amendments 23-56 available from CAA.)
Part 609—Standard Instrument Approach Procedures. (July 27, 1951.)
Part 610—Minimum En Route Instrument Altitudes. (July 27, 1951.)
Part 612—Aeronautical Fixed Communications (June 19, 1951.)
Part 617—Airport Traffic Control Rules. (April 21, 1951.)
*Part 620—Security Control of Air Traffic. (5¢.)
Amendment 1 (February 15, 1951), Amendment 2 (June 28, 1951), Amendment 3. (July 12, 1951.)
*Part 625—Notice of Construction or Alteration. (5¢.)

Miscellaneous

Part 635—Reproduction and Dissemination of Current Examination Materials. (Available without charge from CAA.)

Special Notice on CAM's

Pending such time as it will be possible for the CAA to issue complete Civil Aeronautics Manuals including the appropriate Civil Air Regulations, supplements containing rules, policies, and interpretations will be issued from time to time in the form of pages for a manual. The supplements will continue to be distributed by the CAA free of charge until it is possible to release a complete manual, which will be placed on sale at the Government Printing Office. When published, the manual will include all supplements to date. Manuals and supplements are published in the Federal Register as issued.

Air Regulations . . . August 1, 1951

TITLE	No.	Price	Date	Number of Amendments	Applicable Special Regulations
AIRCRAFT					
Certification, Identification, and Marking of Aircraft and Related Products	1	\$0.05	1/15/51		
Alrplane Airworthiness; Normal, Utility, Acrobatic, and Restricted Purpose Categories	1a	.15	11/ 1/49	6	358,360
Alrplane Airworthiness; Transport Categories	1b	.20	4/ 7/50	3	358,360
Alrplane Airworthiness; Transport Categories	1b	.25	7/20/50	3	358,360
Rotorcraft Airworthiness	6	.10	1/15/51		358,360
Aircraft Airworthiness; Restricted Category	8	.05	10/11/50	1	
Aircraft Airworthiness; Limited Category	9	.05	11/11/49	1	
Aircraft Engine Airworthiness	13	.05	8/ 1/49	2	358
Aircraft Propeller Airworthiness	14	.05	11/ 1/49	2	358
Aircraft Equipment Airworthiness	15	.05	11/ 1/49	3	358,360
Aircraft Radio Equipment Airworthiness	16	.05	2/13/41		
Maintenance, Repair, and Alteration of Certificated Aircraft and of Aircraft Engines, Propellers, and Instruments	18	.05	8/15/49		
AIRMEN					
Pilot Certificates	20	.05	8/ 1/49	9	
Alrline Transport Pilot Rating	21	.05	8/15/49	3	
Lighter-than-air Pilot Certificates	22	.05	11/ 1/49	6	
Mechanic Certificates	24	.05	9/ 1/49	5	365
Parachute Rigger Certificates	25	.05	9/ 5/50	1	
Air-traffic Control-tower Operator Certificates	26	.05	11/ 1/49	4	
Aircraft Dispatcher Certificates	27	.05	11/11/49	4	
Physical Standards for Airmen	29	.05	10/ 1/49	2	
Flight Radio Operator Certificates	33	.05	2/15/50	5	
Flight Navigator Certificates	34	.05	11/ 1/49	4	
Flight Engineer Certificates	35	.05	11/ 1/49	4	
OPERATION RULES					
Air Carrier Operating Certification	40	.05	9/ 1/49		349,353, 356,363, 366,367
Certification and Operation Rules for Scheduled Air Carrier Operations Outside the Continental Limits of the United States	41	.05	11/15/49	3	349,356, 360,367
Irregular Air Carrier and Off-Route Rules	42	.10	6/ 1/49	7	337,349, 350,360, 367,368
General Operation Rules	43	.05	8/ 1/49	7	360
Foreign Air Carrier Regulations	44	.05	9/ 1/49		
Commercial Operator Certification and Operation Rules	45	.05	11/15/49	1	337,349, 356,367
Operation of Moored Balloons	48	.05	9/ 1/49		
Transportation of Explosives and Other Dangerous Articles	49	.10	7/20/49		
AIR AGENCIES					
Airman Agency Certificates	50	.05	10/ 1/49	3	354,355
Ground Instructor Rating	51	.05	10/10/49	2	
Repair Station Rating	52	.05	10/15/49		
Mechanic School Rating	53	.05	10/15/49		
Parachute Loft Certificates and Ratings	54	.05	10/15/49	1	
AIR NAVIGATION					
Air Traffic Rules	60	.10	8/ 1/49		
Scheduled Air Carrier Rules	61	.10	9/ 1/49	4	349,350, 356,360, 363,366, 367
Notice and Reports of Aircraft Accidents and Missing Aircraft	62	.05	5/ 1/49		

1 Certain aircraft may comply with the provisions of this Part or Part 4a.

NOTE: Civil Air Regulations are on sale at the prices indicated by the Superintendent of Documents, Government Printing Office, Washington 25, D. C. Remittances should be by check or money order, payable to the Superintendent. Amendments and special regulations may be obtained from the Publications Section, Civil Aeronautics Board, Washington 25, D. C.

CAA Manuals and Supplements . . . August 1, 1951

TITLE	No.	Price	Date	Supplements	No. of Amending Release
Production Certificates	02	\$0.10	8/ 1/46		
Alrplane Airworthiness; Normal, Utility, Acrobatic, and Restricted Purpose Categories	3	Free		7	
Alrplane Airworthiness	04	.75	7/ 1/44		193,202
Alrplane Airworthiness; Transport Categories	4b	Free		6	
Rotorcraft Airworthiness	6	Free	4/ 3/51	1	
Aircraft Airworthiness; Restricted Category	8	.60	1/ 1/51	1	
Aircraft Propeller Airworthiness	14	.15	5/ 1/46		
Aircraft Equipment Airworthiness	15			(Being revised)	
Aircraft Radio Equipment Airworthiness	16	Free	2/13/41		62,272
Maintenance, Repair, and Alteration of Certificated Aircraft, Engines, Propellers, and Instruments	18	1.25	8/ 1/49	1	
Pilot Certificates	20	Free	6/16/50	1	
Air-Traffic Control-Tower Operator Certificates	26	Free		3	
Aircraft Dispatcher Certificates	27	Free		2	
Flight Radio Operator Certificates	33	Free	6/16/50	3	
Flight Navigator Certificates	34	Free		2	
Flight Engineer Certificates	35	Free	1/ 2/51	2	
Air Carrier Operating Certification	40	Free		3	
Certification and Operation Rules for Scheduled Air Carrier Operations Outside the Continental Limits of the United States	41	Free		11	
Irregular Air Carrier Certification and Operation Rules	42	1.00	9/ 1/49	3	
General Operation Rules	43	Free	8/15/46	2	
Airman Agency Certificates	50	.15	5/ 1/46	3	254
Standard of Performance	51	Free	6/ 8/51	1	
Repair Station Rating	52	Free		1	
Mechanic School Rating	53	Free	5/—/40		
Parachute Loft Certificates and Ratings	54	.15	7/ 1/48		
Instrument Approach Procedure	60	Free		5	
Scheduled Air Carrier Rules	61	Free		8	

NOTE: Manuals for which a price is listed may be obtained from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. Remittances should be by check or money order, payable to the Superintendent. Items marked "free" may be obtained from the CAA Office of Aviation Information, Department of Commerce, Washington 25, D. C.

Air Coordinating Committee Approves Radio Range Decommissioning Policy

(Continued from page 86)

the alert. The VHF omnirange communications channel does not meet this requirement."

NAV Panel Conclusions.—The conclusions of the NAV Panel as contained in the report are as follows:

"The total decommissioning of all 4-course L/MF radio ranges will create serious communications and navigation problems.

"Until these communications and navigation problems are adequately resolved a limited national L/MF airways system should remain in operation.

"(a) A map study indicates a limited national L/MF airways system can be provided by retaining approximately 78 selected SRA radio ranges and operating these ranges at full power (400 watts). It is believed that these 78 full-powered ranges can be so located that, taking into consideration attenuation, terrain, frequency, area coverage and route coverage problems, they will adequately meet the communications and navigation requirements for L/MF facilities during a transition period.

"(b) The full-powered SRA ranges which will remain in operation for an interim period should provide continued scheduled weather broadcasts in the 200-400 Kc band with no degradation of service.

"(c) The full-powered ranges should provide a low frequency aural airway route system to serve the more densely travelled cross-country routes.

"(d) The facilities of the national L/MF airways system should blanket the country, thus making it possible to furnish alert and recall instructions to aircraft under military emergency conditions. This provision should reduce restrictive security controls to a minimum.

"(e) These remaining ranges will provide a national L/MF system for high speed, high altitude operations.

"(f) Two-way voice communications should be retained on all of the some 78 remaining L/MF facilities.

"The majority of the civil users of the airways under IFR conditions will be equipped to use the omnirange by January 1, 1952. However, the largest single user of the airways, military aviation, will not be equipped with omnirange receivers by that date. (It is estimated that military aviation will account for over 41% of the fix postings by Jan. 1, 1952.) Thereafter national defense requirements dictate that the decommissioning schedule not commence until at least fiscal year 1953.

Rapid Decommissioning.—"Since the concurrent use of omniranges and L/MF 4-course ranges results in less efficient control, the L/MF decommissioning program should be accomplished in the shortest period of time operationally and economically feasible. As long as the L/MF facilities are

designated as the primary navigational aid, omnirange-equipped aircraft will receive little or no traffic control benefits. When the majority of airway users, utilizing the airways under IFR conditions, are equipped to fly the omniranges, the omniranges should be designated as the primary navigational aid. After the designation of the omnirange as the primary system, the rapid decommissioning of the 4-course L/MF ranges will assist in simplifying the air traffic control problem and increase the efficiency of control.

"It appears that no great air traffic control problem exists in low traffic density areas, and it is therefore proposed to confine the first phases of decommissioning to these areas. It is the general plan to discontinue the operation of L/MF 4-course ranges on a route or airways segment basis on low traffic density routes where adequate VOR service is provided.

"Prior to effecting decommissioning of L/MF 4-course ranges in high density traffic areas additional VOR facilities should be installed to obtain adequate lateral separation.

Priority Order of Facilities.—"The proposed decommissioning plan requires the classification of the L/MF ranges with respect to their operational use in order to give adequate consideration to the priority assigned each facility or groups of facilities to permit optimum operating efficiency of the system during the transition period. The L/MF ranges are classified by operational use in the priority order for decommissioning as follows:

"Class 1—Facilities determined to be unessential by all users of the airspace and not essential for air traffic control, navigation and national defense.

"Class 2—Facilities serving as terminal aids at airports having low traffic activity and which are not essential for airway L/MF navigational coverage.

"Class 3—Facilities primarily used as L/MF aids for enroute navigation on airways having full VOR coverage at the minimum instrument altitude, between terminal airports with approved approach procedures using an ILS of VHF omnirange.

"Class 4—Facilities used as L/MF aids for instrument approach to major airports served by either ILS or VHF omniranges.

"Class 5—Facilities required for national L/MF system (the estimated 78 full-powered SRA radio ranges).

"The priority of decommissioning normally should be determined by the degree of usage of L/MF facilities, and the status of VHF omnirange implementation as a replacement aid.

"Prior to the initiation of the decommissioning schedule all decommissionings of L/MF facilities should be limited to those facilities as described in * * * Class 1, above.

"The selection of specific place names for incorporation in a discontinuance program can be made only after local study. The ACC/Regional Airspace Subcommittee should be used in making the local study."

Recommended Action.—The ACC said that the factors governing the decommissioning control will be reviewed by the NAV Panel until it is determined that the schedule may be initiated and a firm date established for the schedule, which once started, will be carried to a conclusion within a period of 2 years—the first year approximately 30 percent of the facilities not required for the limited national low frequency system will be decommissioned with the balance to be decommissioned in the second year. Facilities required for

Administrator Lauds Role of Small Planes In Recent Disasters

"Decision of the Air Coordinating Committee to allow the production of personal planes at a rate of 3500 a year has been dramatically underscored by the surprising feats of the small planes in the Middle West flood disaster," said Charles F. Horne, Administrator of Civil Aeronautics.

"These planes will be needed in any national emergency for civilian services.

"Preliminary reports indicate that the small airplane is repeating the sensational feats which gave it national prominence in the 1947 blizzards in the Northwest, saving lives, aiding in rescues, and doing a hundred jobs which no other vehicle can do," Mr. Horne continued. "It is unfortunate that we do not have names and dates and places for some of the exploits, but CAA field personnel report that the pilots are more interested in flying mercy missions than they are in writing reports.

"Alan Sparrowhawk, chief pilot for Roy Moore Airport, at Salina, Kansas, reported many rescues by boatmen who were guided by pilots who flew over the flooded areas at night and observed pre-arranged flashlight signals from people marooned on rooftops and in trees. Sparrowhawk himself has flown several mercy trips taking sick people to hospitals outside the flooded area. He reports also that pilots have been ferrying the bodies of deceased persons from the flooded areas to localities where burials can be performed.

"William H. Jannsen, airport operator at McPherson, Kansas, and former president of the Flying Farmers, has been making many mercy flights delivering serum, vaccines and other medicines, landing on highways, and dropping messages over the city of Marion. Recently he flew a doctor to the vicinity of a stalled Santa Fe train isolated for two days near Cedar Point, Iowa. Many of the 300 passengers on the train were ill from food poisoning and there was no doctor aboard. On this trip, Mr. Jannsen landed his plane on a highway where the telegraph poles on either side allowed only a few feet clearance for his wings.

"The present flood has crowded other smaller floods out of the public eye, but there were serious floods in Southeastern Kansas on May 14, and another on May 22 in the vicinity of Hays, Kansas. Despite the fact that these occurred in the midst of the agricultural, spraying and dusting season, operators were active in bringing food and medicines to farmers, getting sick persons to hospitals and doing what they could to replace the highway traffic which the floods stopped.

"Floods and blizzards present similar dislocations of normal life that an enemy attack might present, and the recent small plane activities actually forecast what such planes could do in the event of war. Recently at Cedar Rapids, Iowa, civil defense officials staged a practice 'attack' on the city, and marshalled the services of 309 private airplanes which hauled 110,000 pounds of simulated supplies into the 'stricken' city in two hours. This surprising example of public awareness indicates that people in the aviation business are more awake than the average citizen to the need for preparedness in civil defense."

the national L/MF system (Class 5) will be retained as long as necessary.

Regional ACC Airspace Sub-committees will immediately survey all L/MF ranges within their regions, the ACC said, and review decommissioning decisions which have been made recently, to the end that those facilities unessential for all users of the airspace, air traffic control, navigation and national defense will be decommissioned during fiscal year 1951.

CAM Supplements

(Issued between July 1, 1951, and July 31, 1951, and obtainable from the CAA Office of Aviation Information, Department of Commerce, Washington 25, D. C.)

CAM No.	Supplement No.	Date	Subject
26	4	7/24/51	Correction to Appendix A of CAM 26.
33	3	7/2/51	Errata Sheet for 33.31-2.
35	3	7/2/51	Requirements for Approved Flight Engineering Courses.
60	6	7/13/51	Correction to 60.46-8 and 60.46-10.
61	9	7/2/51	Radio Ground Check.

Identification Cards Required for Pilots By September First

Many personal fliers are likely to be grounded on September 1 for failure to obtain identification cards, warned Charles F. Horne, Administrator of Civil Aeronautics.

The Administrator reported that a recent check by the Airman Division of the CAA Office of Aviation Safety shows that every CAA Safety Agent will have a long line of applicants formed at his desk on September 1, if the present slow rate of issuance continues.

Military pilots who desire to exercise their privileges in civilian flying must also have cards, the Administrator reminded.

The identification cards are part of the CAA program to make possible the maximum amount of civil flying under national emergency conditions. They supplement, but do not replace, the airman certificate which the airman must continue to carry as evidence of the type of aeronautical activity he is qualified to perform.

Any CAA Aviation Safety Agent in a District Office or at Regional Headquarters can assist in issuing the cards, but Applicants must apply in person.

An airman applying for a card should provide the following items:

1. Two identical photographs, approximately one by one-inch in size, full face, head only, taken within twelve months preceding date of application.
2. Proof of identification, such as licenses, or combinations of identification cards and documents which will identify the applicant.
3. Proof of citizenship, place and date of birth, such as birth certificate, baptismal certificate, passport or an airman identification card issued by CAA during World War II.
4. His airman certificate.

The applicant's fingerprint will be placed by the agent on both the application form and the identification card.

Applicants who have lost their World War II CAA identification card may write the Chief, Airman Records Branch, CAA, Washington 25, D. C., and request a letter verifying that such a card was issued to them. This letter will meet the citizenship, and place and date of birth requirements for obtaining one of the new identification cards.

Shipments of Civil Aircraft Show Decrease During May

Civil aircraft shipments in May 1951 totaled 248 aircraft, weighing 569,600 airframe pounds, valued at \$10,737,621, according to a report issued jointly by the Civil Aeronautics Administration and the Bureau of the Census, Department of Commerce.

	1951		1950 May
	May	April	
Number (total).....	248	247	377
Number by type of plane:			
Personal.....	233	231	370
Transport.....	15	16	7
Number by place:			
1- and 2-place.....	54	50	114
3- to 5-place.....	179	181	256
Over 5-place.....	15	16	7
Airframe weight (thousand pounds):			
Personal.....	193.5	196.1	278.5
Transport.....	376.1	462.1	244.4
Value (thousand dollars):			
Complete aircraft.....	\$10,738	\$13,352	\$7,809
Parts.....	2,501	3,068	5,870
Other products.....	3,555	3,361	2,325
Unfilled orders (number of transports).....	574	579	160

Communication by Radio Vital in Aerial Rescues

Getting pilots to use their radios when they need help continues to be a problem, reports to the Civil Aeronautics Administration reveal.

An instance where rescue parties spent a week searching in vain for a plane because the pilot failed to use his radio has been reported to the CAA from Alaska.

Forced 45 miles off-course by the weather, and out of gas 60 miles from his destination, the pilot came down in an isolated, inaccessible spot with no one knowing his whereabouts simply because he did not make use of his two-way radio. Inasmuch as no radio transmission had been heard from the plane during the flight, searching parties concentrated their hunt for the lost pilot in the mountains on the theory that the plane had met with a sudden accident in which use of the radio was impossible or was down in terrain where radio signals were blocked.

Actually the pilot had not tried to use his transmitter. During his last five or ten minutes in the air, he flew around looking for a handy spot to land. "He was so close to a CAA radio station, he would have blasted the communicator right out of his sequences if he had said a few brief words," remarked D. M. Gretzer, Chief of the CAA Airman Division in Alaska, in reporting the incident.

A week of expensive and futile searching for the lost plane was called off when the pilot and his passengers made their way to a camp and then to town.

CAA officials believe one reason some pilots are mute when they should be using their radios is that they don't know the slicked up, abbreviated language the communicators use on the air. Somehow they have the idea that if they don't use this language, someone will call them down. But, the CAA points out, this special lingo is used for speed and clarity and is not compulsory. Any words that will get the message across are satisfactory.

"Pilots in many cases can avert serious difficulties if they will only make use of the CAA's radio facilities," Charles F. Horne, Administrator of Civil Aeronautics, said. "We have said this before but it is worth repeating. We don't care how they talk but we want pilots to talk to us when we can be of any assistance."

New Instruction Manual Aids Students, Instructor

Information to assist flight instructors and student pilots is presented in the new "Flight Instruction Manual" just issued by the Civil Aeronautics Administration. Although prepared principally for students and instructors, the manual contains much information of interest to pilots generally.

Basic information on the theory of flight, principles of safe flight, and general techniques in the care and use of parachutes comprises one part of the manual. Part two reviews teaching methods, provides information on basic flying techniques, and outlines generally the objectives the instructor should strive to meet. Part three deals with that portion of the student's flight course involving actual use of the airplane. There also are chapters on elementary, intermediate, advanced, acrobatic, seaplane and multi-engine instruction.

The manual includes an appendix and a glossary of aeronautical terms. Material of special interest to pilots endeavoring to qualify for ratings as flight instructors is included in the appendix.

Prepared by personnel of the CAA's Airman Division, the publication, entitled "Flight Instruction Manual," is on sale at \$1.50 a copy by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. Checks should be made payable to the Superintendent.

"Rubber Man" Model Is CAA Development To Aid Flying Safety

"Elmer," CAA's rubber man, is taking a terrific bouncing around in the interests of advancing aviation.

"Elmer" is a remarkably life-like model produced by the Civil Aeronautics Administration for testing various apparatus designed to insure human safety in air travel. No sooner was he "born" in the machine shop of John J. Swearingen in the Civil Aviation Medical Research Laboratories at Oklahoma City, than he was "apprenticed" to the Beech Aircraft Corporation at Wichita, Kansas, for studies in the design of improved shoulder harness for pilots. Now, having almost completed that assignment, Elmer is being loaned by the CAA to the Air Forces for studies they are making in deceleration at the Muroc Lake air base.

The fact that he is so near human in his compressibility, flexion, center of gravity, muscular contraction and natural relaxation is due to the unique design by Swearingen and his assistants. It gives Elmer a personality well-recognized around the Aeronautical Center where he is never referred to as a "crash dummy," but always as Elmer.

Swearingen carved the head from a well-seasoned block of hickory, sawed it in half and inserted a large bolt for attachment to the neck structure. Then the sides were glued together and bolted through the eye sockets. The result is a head of satisfactory weight and center of gravity without the use of lead.

Elmer's neck consists of circular pieces of foam rubber, one inch thick, compressed between circular steel plates. The neck bends naturally. Shoulders are of three sections made of wood, reinforced with steel, and the arms are held on by a steel cable with springs. Arms and legs are made of sections of pipe over angle iron with molten lead added to simulate exact human conditions.

Swearingen's best work on Elmer, however, was in the design and construction of the thorax and abdomen. The construction involves lamination of alternate sheets of steel and one-inch-thick foam rubber, strung on a steel cable at the end of which is a spring. This spring can be tightened or loosened to adjust resistance to flexion. The trunk has a small degree of rotation, and can be flexed to the side or forward. Elmer always returns to a sitting position without any adjustments.

He weighs 216 pounds, and his body action is so lifelike that his stomach has a roll of "flesh" just above the belt when he is bent over. Elmer's skin and covering body tissues are foam rubber, and he is enclosed in a light canvas, skin-tight suit. This makes him easier to carry, although CAA acquaintances think Elmer would be fine practice material for policemen who have to handle unwieldy inebriates. For clothes, he usually wears a plain white coverall.

Elmer always travels by air. He flew to Wichita. When his job there is done, he will be flown by the Air Force to Muroc. He is destined to a life of accidents, all of them intentional, and all of them happening directly to Elmer.

Growing Turf on Airports

The CAA pamphlet "Airport Turfing," published as a guide for those interested in the development of turf for airports, discusses such phases as soil characteristics, grading and drainage, planting methods, mulching, and maintenance procedures. The publication is available from the Superintendent of Documents, Government Printing Office, Washington, D.C., at 25 cents per copy.

ty

rrific
cing

uced
esting
afety
ma-
Avia-
oma
Air-
es in
lots.
nent,
orces
the

pres-
trac-
ique
gives
aero-
as a

oned
ed a
ture.
oltd
l of
the

oam
ular
ders
with
with
pipe
ulate

s in
ab-
lter-
ber,
is a
d to
mall
e or
tion

s so
just
skin
l be
This
aint-
erial
ebri-
white

hita.
the
acci-
hap-

shed
nent
soil
eth-
The
t of
ing-

AL